ORDER NO. AD9605116C1
A0

Service Manual

Receiver

SA-TX50

Home THX control receiver

LUCASFILM
THX®

DOLBY SURROUND*
PRO · LOGIC

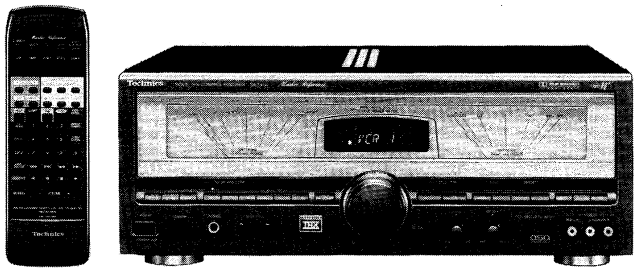
Manufactured under license from Lucasfilm Ltd. U.S. patent numbers 5,043,970; 5,189,703; and 5,222,059. Foreign patents pending. Lucasfilm, THX and Home THX Cinema are registered trademarks of Lucasfilm Ltd.

Colour

(B)...Black Type

Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada.	



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■ SPECIFICATIONS (IHF '78)

■ POWER AMPLIFIER SECTION

(POWER AMPLIFIER INPUT)	
Rated minimum sine wave RMS power output	
20 Hz–20 kHz both channels driven	
0.05% total harmonic distortion	125 W per channel (6 Ω)
1 kHz continuous power output both channels driven	
0.05% total harmonic distortion	130 W per channel (6 Ω)
Total harmonic distortion	
rated power at 20 Hz–20 kHz	0.05% (6 Ω)
half power at 1 kHz	0.03% (6 Ω)
Power output at the Dolby Pro Logic operation	
0.8% (clip threshold) at 1 kHz,	
Front	2×120 W (6 Ω)
Center	120 W (6 Ω)
Surround	2×100 W (6 Ω)
Low frequency damping factor	25 (6 Ω)
Load impedance	
A or B	4–8 Ω
A and B	8 Ω
Center	4–8 Ω
Surround	4–8 Ω
Dynamic headroom	2 dB (8 Ω)
SMPTE intermodulation distortion	0.3% (8 Ω)

■ PRE AMPLIFIER SECTION

Frequency response	
CD, TAPE, VCR 1, VCR 2, VCR 3, VDP, VDP 6CH, TV	20 Hz–20 kHz, ±1 dB
Input sensitivity	
CD, TAPE, VCR 1, VCR 2, VCR 3, VDP, VDP 6CH, TV	30 mV (300 mV, IHF '66)
S/N	
CD, TAPE, VCR 1, VCR 2, VCR 3, VDP, VDP 6CH, TV	70 dB (IHF A)
Input impedance	
CD, TAPE, VCR 1, VCR 2, VCR 3, VDP, VDP 6CH, TV	34 kΩ

Tone controls	
BASS	50 Hz, +10 to –10 dB
TREBLE	20 kHz, +10 to –10 dB

■ FM TUNER SECTION

Frequency range	87.9–107.9 MHz
Sensitivity	11.2 dBf (2 µV, IHF '58)
50 dB quieting sensitivity	
MONO	18.3 dBf (4.5 µV, IHF '58)
STEREO	38.3 dBf (45 µV, IHF '58)
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	75 dB
STEREO	70 dB
Frequency response	20 Hz–15 kHz, +1 dB, –2 dB
Alternate channel selectivity	65 dB
Capture ratio	1 dB
Image rejection at 98 MHz	45 dB
IF rejection at 98 MHz	80 dB
Spurious response rejection at 98 MHz	75 dB
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	–35 dB
38 kHz	–50 dB
Antenna terminals	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	530–1710 kHz
Sensitivity	20 µV, 330 µV/m
Selectivity	55 dB
Image rejection at 1000 kHz	40 dB
IF rejection at 1000 kHz	60 dB

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Contents

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ VIDEO SECTION

Output voltage at 1 V input (unbalanced)	1±0.1 Vp-p
Maximum input voltage	1.5 Vp-p

■ GENERAL

Power consumption	[For U.S.A.] 260 W [For Canada] 330 W, 440 VA
Power supply	AC 120 V, 60 Hz
Dimensions (W×H×D)	430×170×375 mm (16-15/16"×6-11/16"×14-3/4")
Weight	12 kg (26.5 lb.)

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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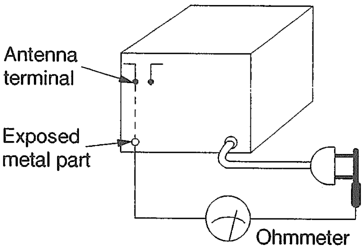
■SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

● INSULATION RESISTANCE TEST

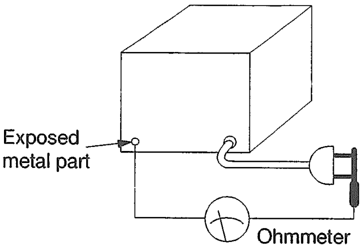
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2 MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance=3MΩ-5.2MΩ



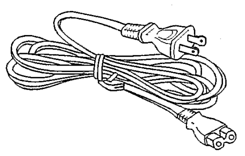
(Fig. B)

Resistance=Approx. ∞

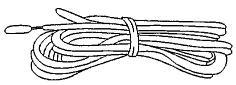
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ACCESSORIES

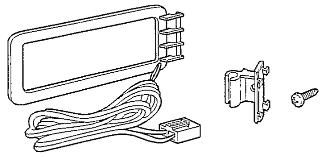
AC power supply cord ....1 pc.
(SJA172)



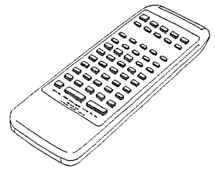
FM indoor antenna (RSA0006) ....1 pc.



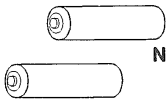
AM loop antenna set (RSA0010) ....1 pc.
- AM antenna holder (RMN0244)............1 pc.
- Screw (XTN3+12AFZ)...........................1 pc.



Remote control transmitter
(RAK-SA608MH).. 1 pc.

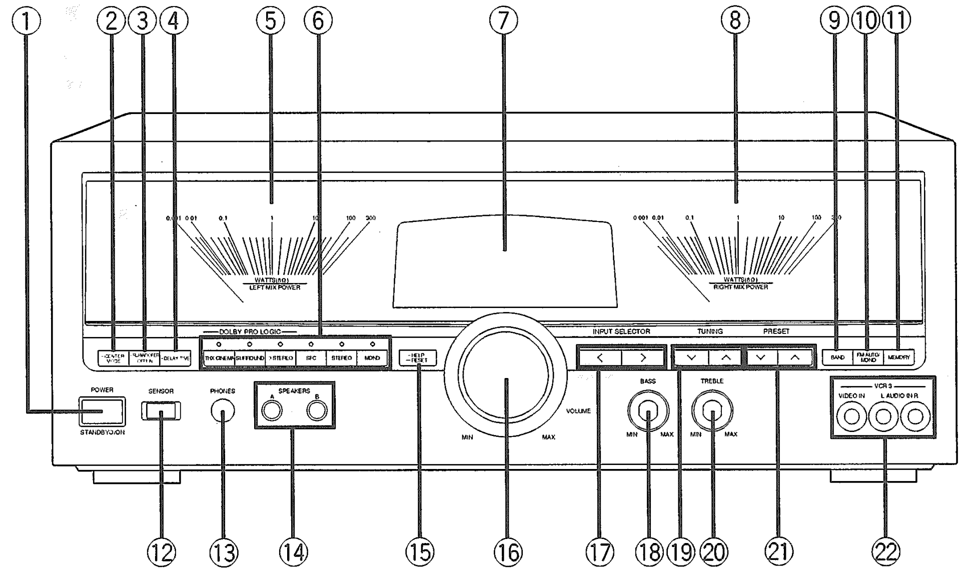


Batteries for remote control transmitter.....2 pcs.
(UM-4, "AAA", R03)



Note: These are available on sales route.

■FRONT PANEL CONTROLS



①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
0.001 0.01 0.1 1 10 100 300
WATTS(8Ω)
LEFT MIX POWER
WATTS(8Ω)
RIGHT MIX POWER
DOLBY PRO LOGIC
–CENTER MODE
–SUBWOOFER OFF/ON
–DELAY TIME
THX CINEMA
SURROUND
3 STEREO
SFC
STEREO
MONO
–HELP –RESET
INPUT SELECTOR
TUNING
PRESET
BAND
FM AUTO/MONO
MEMORY
POWER
STANDBY⏻/ON
SENSOR
PHONES
SPEAKERS
A
B
VOLUME
MIN
MAX
BASS
TREBLE
VCR 3
VIDEO IN
L AUDIO IN R
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
㉑
㉒

No.	*Name*
①	**Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)** Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
②	**Center mode select button (–CENTER MODE)**
③	**Subwoofer OFF/ON button (–SUBWOOFER OFF/ON)**
④	**Delay time adjust button (–DELAY TIME)**
⑤	**Left channel power meter (LEFT MIX POWER)**
⑥	**Playback mode select buttons/indicators**
⑦	**Display**

No.	*Name*
⑧	**Right channel power meter (RIGHT MIX POWER)**
⑨	**Band select button (BAND)**
⑩	**FM mode select button (FM AUTO/MONO)**
⑪	**Memory button (MEMORY)**
⑫	**Remote control signal receptor (SENSOR)**
⑬	**Headphone jack (PHONES)**
⑭	**Speaker select buttons (SPEAKERS)**
⑮	**Help/reset button (-HELP –RESET)**
⑯	**Volume control (VOLUME)**
⑰	**Input select buttons (INPUT SELECTOR)**

No.	*Name*
⑱	**Bass control (BASS)**
⑲	**Tuning control buttons (TUNING)**
⑳	**Treble control (TREBLE)**
㉑	**Preset channel select button (PRESET)**
㉒	**VCR 3 front input terminals (VCR 3)**

Power meters (⑤, ⑧)

The meters on each side of the display indicate the power mix of all the speakers combined, the left power mix on the left and the right power mix on the right.

When only the center speaker is producing sound, as is the case with monaural signals, output testing or dialogues heard in the Dolby Pro Logic playback mode, the left and right needles waver exactly the same.

For your reference

The short and long bars found on some of the buttons indicate whether you have to press (-) the button or hold it down (–) to access/operate the function.

■EQUIPMENT CONNECTIONS

Connecting audio equipment

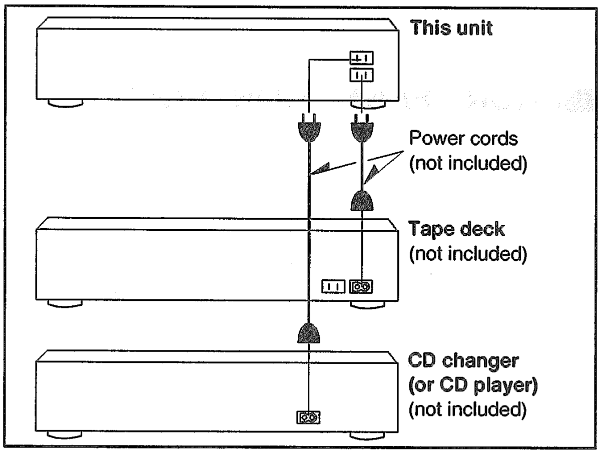
Ⓐ "SWITCHED" AC outlet(s)

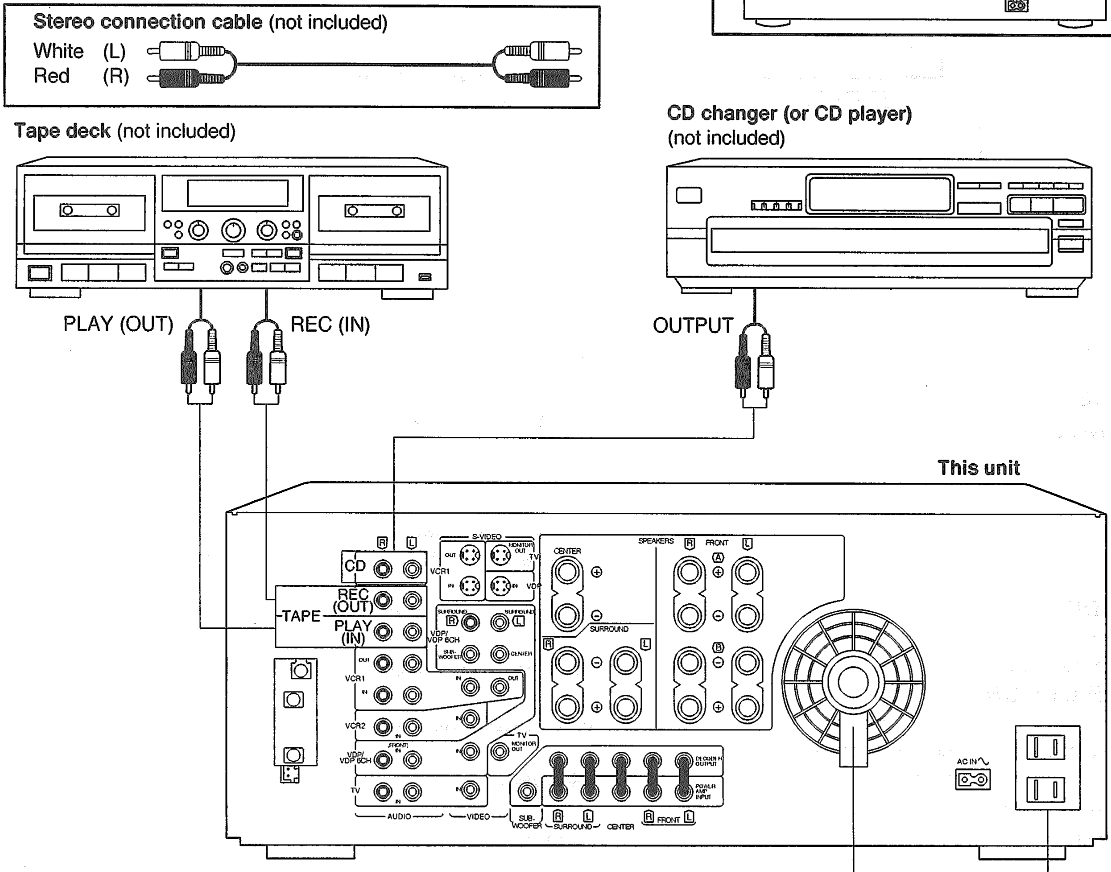
(For U.S.A.)

Power to these outlets is controlled by the power switch of this unit. Audio equipment rated up to 300 W can be connected here.

For proper remote-control operation

Connect the power cords of the tape deck and CD changer (or CD player) to these outlets as shown below.

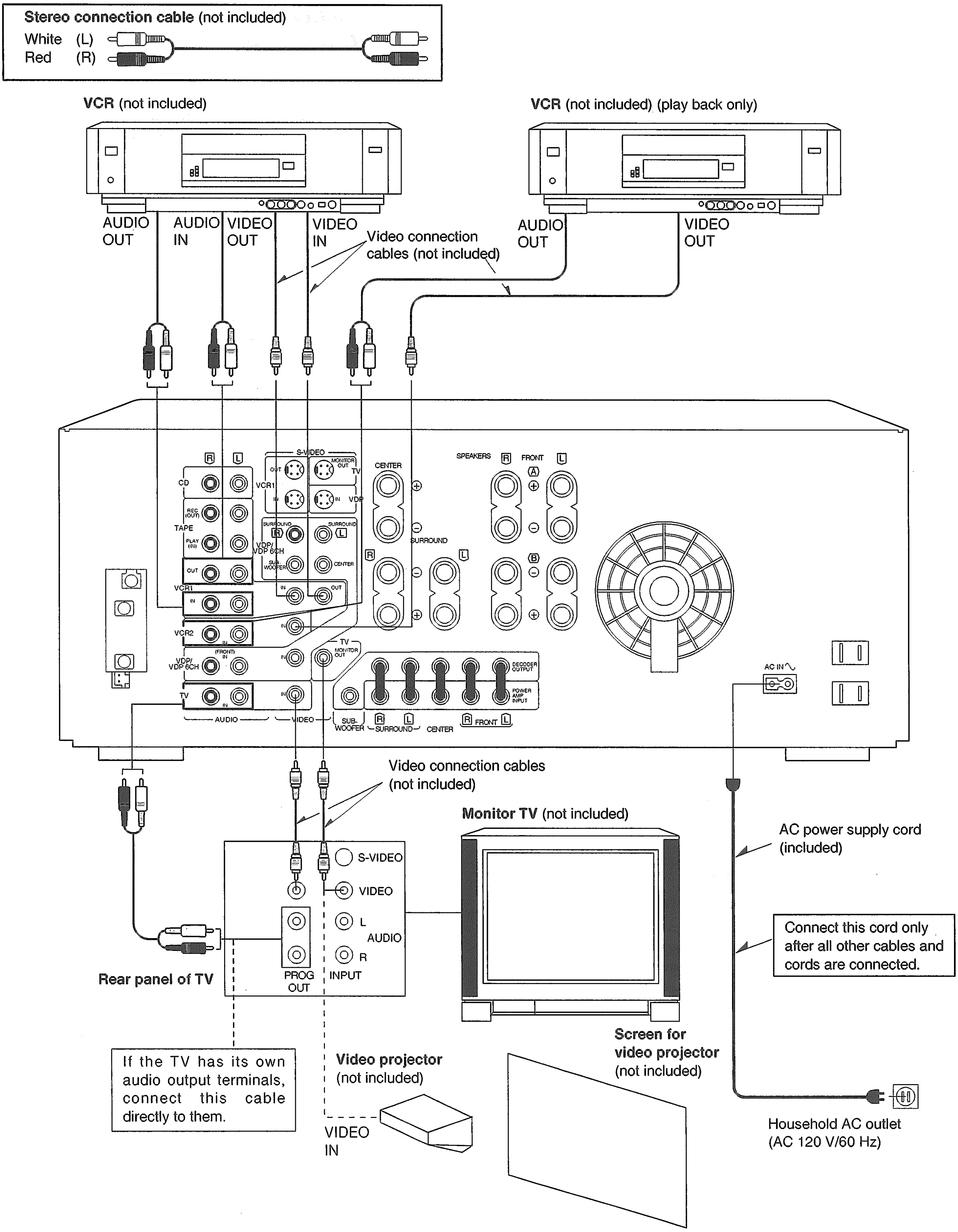

This unit
Power cords
(not included)
Tape deck
(not included)
CD changer
(or CD player)
(not included)


Stereo connection cable (not included)
White (L)
Red (R)
Tape deck (not included)
CD changer (or CD player)
(not included)
PLAY (OUT)
REC (IN)
OUTPUT
This unit
CD
TAPE
REC (OUT)
PLAY (IN)
A

Cooling fan

The cooling fan operates at high power output levels only.

Connecting video equipment

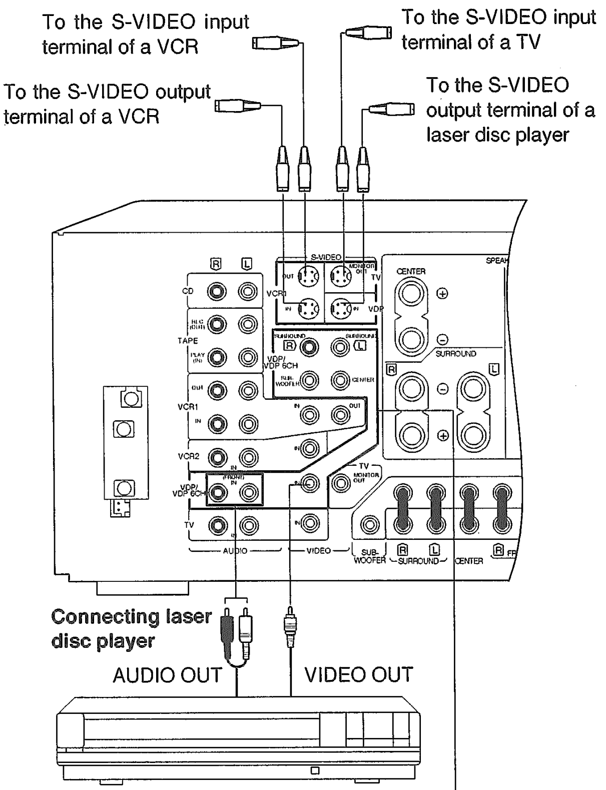

Stereo connection cable (not included)
White (L)
Red (R)
VCR (not included)
VCR (not included) (play back only)
AUDIO OUT
AUDIO IN
VIDEO OUT
VIDEO IN
Video connection cables (not included)
AUDIO OUT
VIDEO OUT
R
L
CD
REC (OUT)
TAPE
PLAY (IN)
OUT
VCR1
IN
VCR2
IN
(FRONT) IN
VDP/ VDP 6CH
TV
IN
AUDIO
S-VIDEO
MONITOR OUT
TV
VCR1
OUT
IN
IN
VDP
SURROUND
R
L
VDP/ VDP 6CH
SUB WOOFER
CENTER
IN
OUT
IN
TV
MONITOR OUT
IN
IN
VIDEO
CENTER
SURROUND
SPEAKERS
FRONT
A
B
DECODER OUTPUT
POWER AMP INPUT
SUB-WOOFER
SURROUND
CENTER
FRONT
AC IN
Video connection cables (not included)
Monitor TV (not included)
AC power supply cord (included)
S-VIDEO
VIDEO
L
AUDIO
R
PROG OUT
INPUT
Rear panel of TV
Video projector (not included)
VIDEO IN
Screen for video projector (not included)
Household AC outlet (AC 120 V/60 Hz)

Connect this cord only after all other cables and cords are connected.

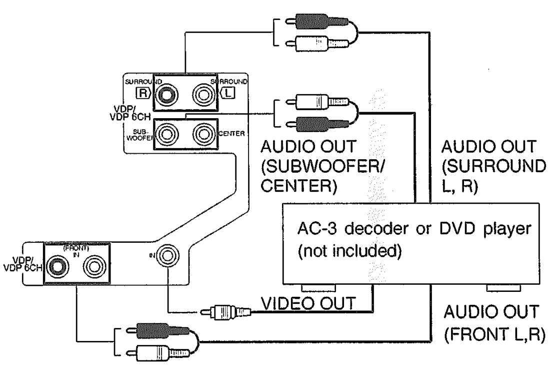
If the TV has its own audio output terminals, connect this cable directly to them.

Connections to/from S-VIDEO terminals

This receiver has an S-VIDEO terminal for each a TV, laser disc player and VCR (VCR 1 only)


To the S-VIDEO input terminal of a VCR
To the S-VIDEO input terminal of a TV
To the S-VIDEO output terminal of a VCR
To the S-VIDEO output terminal of a laser disc player
S-VIDEO
CENTER
SURROUND
CD
TAPE
VCR1
VCR2
VDP/ VDP 6CH
TV
AUDIO
VIDEO
SUB-WOOFER
CENTER
Connecting laser disc player
AUDIO OUT
VIDEO OUT
Laser disc player (not included)

Connecting an AC-3 decoder or DVD player with discrete 6 channel output


SURROUND
VDP/ VDP 6CH
SUB-WOOFER
CENTER
(FRONT)
AUDIO OUT (SUBWOOFER/ CENTER)
AUDIO OUT (SURROUND L, R)
AC-3 decoder or DVD player (not included)
VIDEO OUT
AUDIO OUT (FRONT L,R)

Caution when using a TV with an S-VIDEO terminal

On some television models, the video signal from components which do not use S-VIDEO input and are connected only to the VIDEO terminals will not be shown on the television screen.
If this occurs, use one of the following methods to view the video signal.

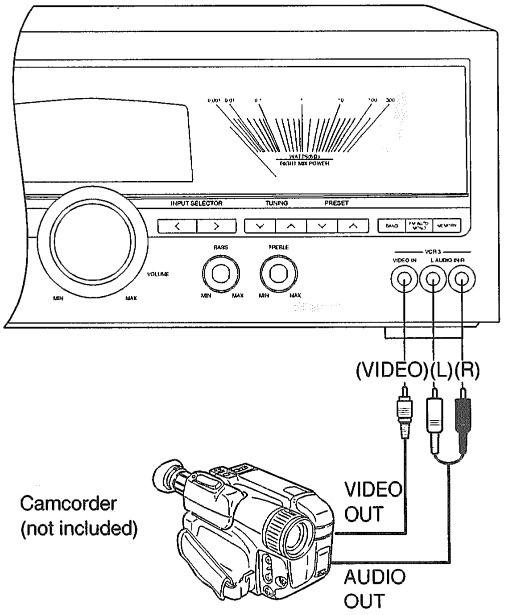
Does the television have a "VIDEO/S-VIDEO" selector switch?

YES — Set the switch to "VIDEO".

NO

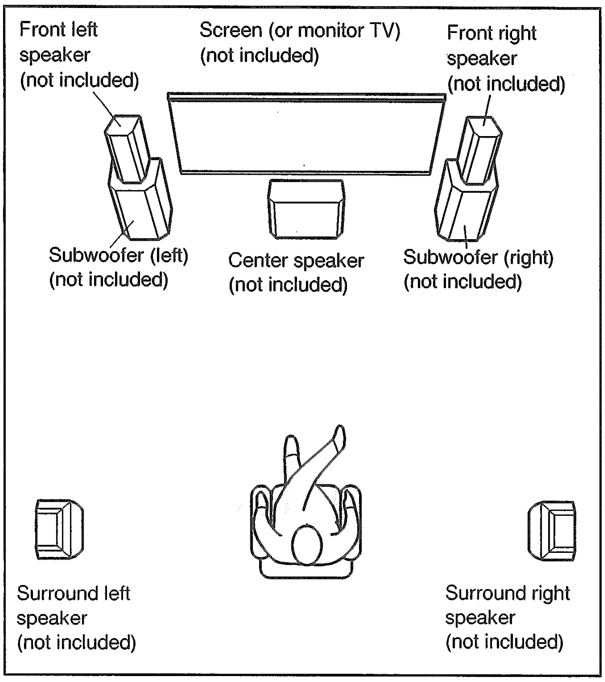
- **If the television has two or more video input terminals**
  Connect the VIDEO terminal and the S-VIDEO terminal to different video input terminals on the television, and switch the picture on the television according to the video source being played.
- **If the television has only one video input terminal**
  Disconnect the S-VIDEO cable connected to the television's S-VIDEO terminal and connect only the video terminal.

Connecting to the front VCR 3 terminals


INPUT SELECTOR
TUNING
PRESET
BASS
TREBLE
VOLUME
VCR 3
VIDEO IN
L AUDIO IN R
(VIDEO)(L)(R)
Camcorder (not included)
VIDEO OUT
AUDIO OUT

■SPEAKER CONNECTIONS

Placement of speakers


Front left speaker (not included)
Screen (or monitor TV) (not included)
Front right speaker (not included)
Subwoofer (left) (not included)
Center speaker (not included)
Subwoofer (right) (not included)
Surround left speaker (not included)
Surround right speaker (not included)

For front speakers

Place the front left/right speakers at both the left and right edges of the screen at seated ear height so that there is good coherency between the picture and sound.

For center speaker

Place the center speaker underneath or above the center of the screen (or monitor TV).
Aim the speaker such that it is pointed at the seating area.

For surround speakers

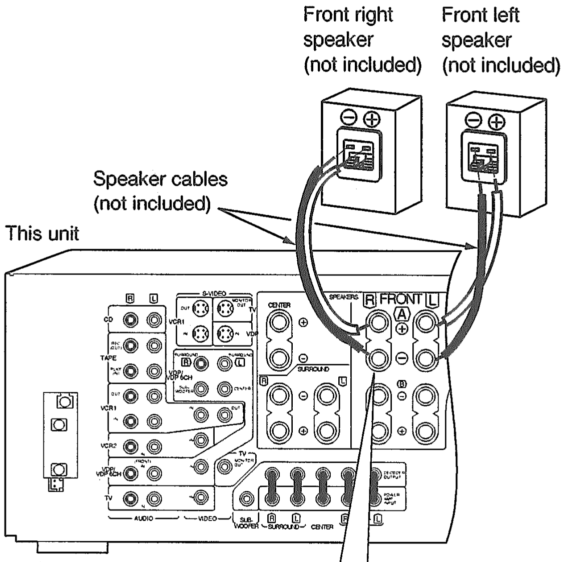
Place these speakers somewhere between 1.5 m–2 m from the floor on the left and right sides of the listening position.

For subwoofer

The subwoofer can be placed in any position as long as it is at a reasonable distance from the screen or monitor TV.
Note that some experimentation in placement of the subwoofer can yield smoothest low frequency performance. Placement near a corner can increase the apparent output level, but can result in unnatural bass.

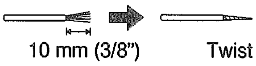
For your reference:
The SA-TX50 will provide outstanding performance when used with any speaker system. For most accurate multichannel soundtrack reproduction, the use of a THX-certified speaker system is recommended.

Connection of front speakers

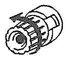

Front right speaker (not included)
Front left speaker (not included)
⊖ ⊕
⊖ ⊕
Speaker cables (not included)
This unit
FRONT
R
L
A
B
CENTER
SURROUND

To connect cords to terminals

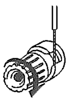
① Strip off the outer covering, and twist the center conductor.


10 mm (3/8")
Twist

② Turn completely to the left.

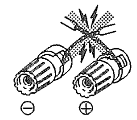


③ Insert the wire and turn completely to the right. Pull the cord to assure a proper connection.
Be sure to only connect positive (+) cords to positive (+) terminals, and negative (–) cords to negative (–) terminals.



Note

To prevent damage to circuitry, never short-circuit the positive (+) and negative (–) speaker wires.



- Banana type connectors are not suitable for use with the speaker terminals of this unit.
- When connecting THX-approved front speakers, be sure to also use a THX-approved subwoofer in order to achieve a full THX system.

■ "B" terminals

For connection to a second pair of speakers.

■ Speaker impedance

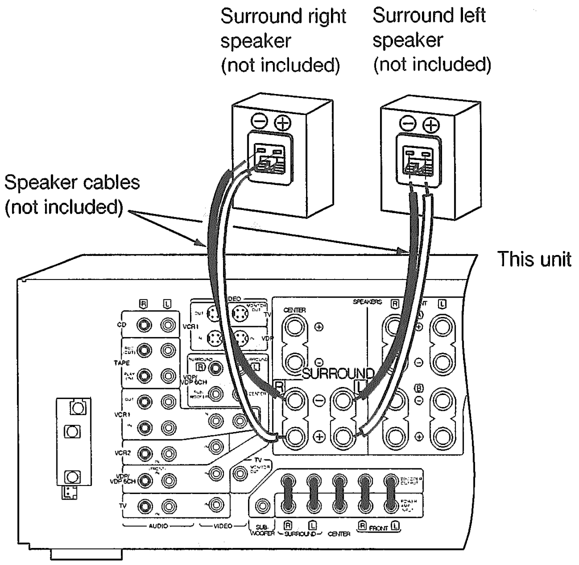
When only the "A" or "B" speakers are connected:
The impedance of the speaker used with this unit must be 4–8 Ω.

Note

If speakers under 6 Ω are connected, be sure to set the impedance on the unit to LOW according to step 2 on page 9.

When both the "A" and "B" speakers are connected simultaneously:
The impedance of the speaker used with this unit must be 8 Ω.

Connection of surround speakers


Surround right speaker (not included)
Surround left speaker (not included)
Speaker cables (not included)
This unit
SURROUND

Note

Before sound can be heard from the surround speakers, both surround speakers must be connected.

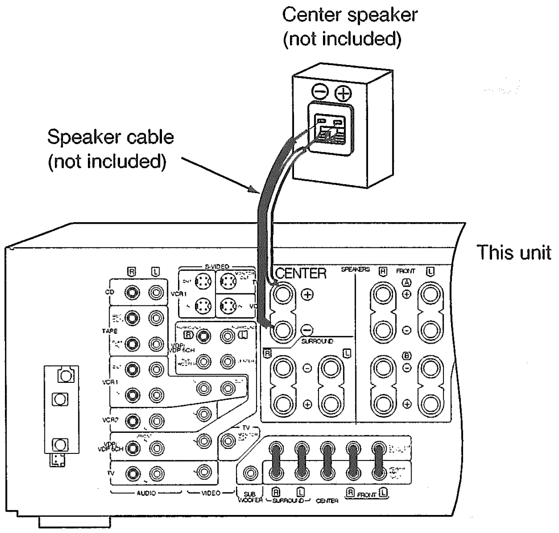
■ Speaker impedance

The impedance of any speaker used with this unit must be 4–8 Ω.

Note

If speakers under 6 Ω are connected, be sure to set the impedance on the unit to LOW according to step 2 on page 9.

Connection of center speaker


Center speaker (not included)
Speaker cable (not included)
This unit
CENTER

■ Speaker impedance

The impedance of any speaker used with this unit must be 4–8 Ω.

Note

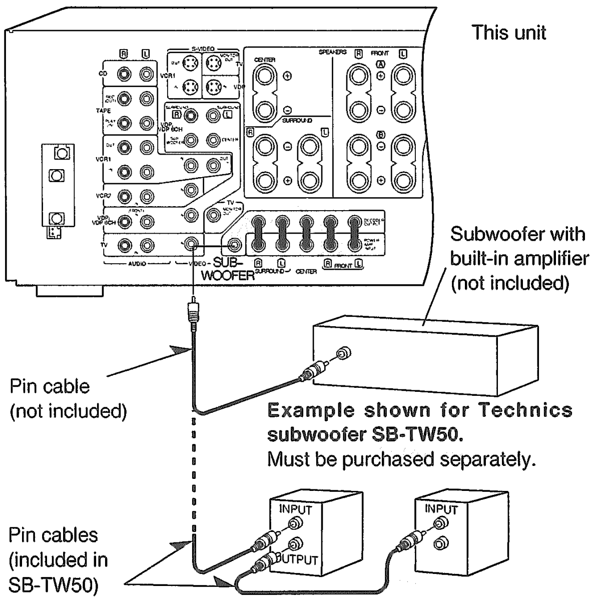
If a speaker under 6 Ω is connected, be sure to set the impedance on the unit to LOW according to step 2 on page 9.

Connection of subwoofer

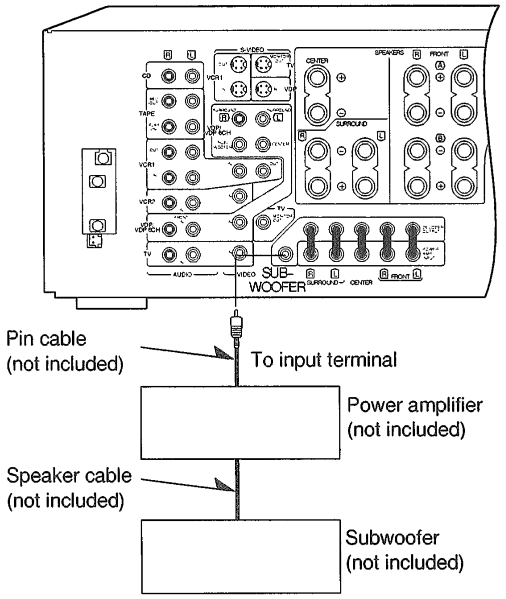
A subwoofer is recommended when bass sounds are inadequately reproduced from front speakers that are too small.
For subwoofer placement, see page 7.

Note

- The SA-TX50 has no amplifier section designed especially for the subwoofer, so it is necessary to purchase a subwoofer with a built in amplifier or buy the two separately.
- The SA-TX50 will provide outstanding performance when used with any subwoofer and power amplifier.
  For most accurate sound reproduction, the use of THX-certified subwoofer and power amplifier is recommended.

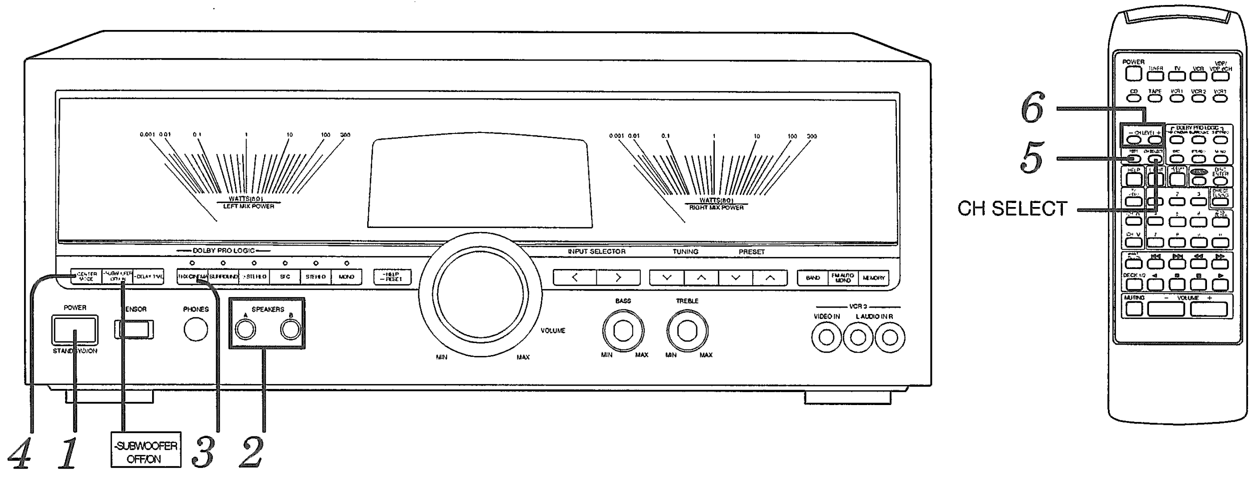

This unit
SUB-WOOFER
Subwoofer with built-in amplifier (not included)
Pin cable (not included)
Example shown for Technics subwoofer SB-TW50.
Must be purchased separately.
INPUT
INPUT
OUTPUT
Pin cables (included in SB-TW50)

Connecting a subwoofer which does not have a built-in amplifier


SUB-WOOFER
Pin cable (not included)
To input terminal
Power amplifier (not included)
Speaker cable (not included)
Subwoofer (not included)

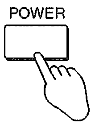
■PREPARATION FOR DOLBY PRO LOGIC OPERATION

Adjusting the output level of each speaker



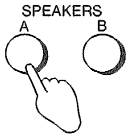
- Before operation, set VOLUME to the "MIN" position.
- When viewing a video, turn on the power supply for the TV and set the TV to video mode.

1

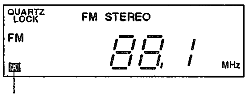


Press POWER to switch on the power.

2



Press A or B to select the front speaker systems to be used.
A and B refer to the speaker terminals at the rear of the unit.

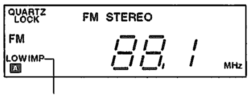


Illuminates

If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

When using speakers with under 6 Ω impedance

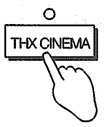
If even one of the speakers being used has an impedance of under 6 Ω, press either button A or button B for 4 seconds or more to set the impedance on the main unit to LOW.



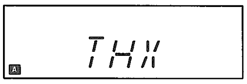
Illuminates

(Press once again for 4 seconds or more to turn it off.)
Note that when this indicator is illuminated, speakers A and B cannot both be used at the same time.
To change a speaker:
e.g. To use B speaker press A (the A indicator goes out), and then press B to activate the B speaker.

3

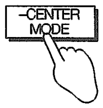


Press THX CINEMA to turn on the THX CINEMA mode.

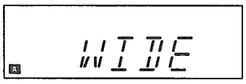


The indicator above this button will illuminate.

4



Press CENTER MODE to select the correct center mode.



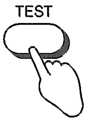
When the button is pressed, the current center mode is displayed.
Holding it down again changes the center mode.

NORM (NORMAL)
When the center speaker is smaller than the front speakers

WIDE (WIDEBAND)
When the center speaker is the same size as the front speakers or when your speaker system is THX certified and includes a subwoofer

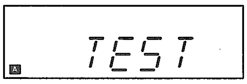
PHAN (PHANTOM)
When no center speaker is connected.

5



by remote control only

Press TEST to output a test signal.



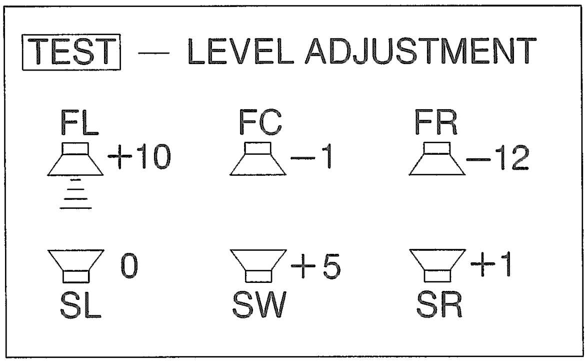
Test signal sounds automatically and switches from speaker to speaker.
You can also select a particular speaker without waiting until its turn comes, by pressing CH SELECT.

Front left speaker → Center speaker → Front right speaker
↓
Surround right speaker → Surround left speaker → Subwoofer
↑
Front left speaker

Note

In the PHANTOM mode, the sound from the center speaker can not be heard.

When you turn on the TV, the output test display will appear on the TV. (See page 15.)



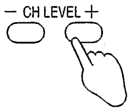
TEST — LEVEL ADJUSTMENT

FL +10 FC −1 FR −12

0 SL +5 SW +1 SR

In this example, the test signal is being emitted by the front left speaker.

6



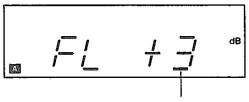
by remote control only

Press CHANNEL LEVEL (−) or (+) to adjust the output level balance.

Adjust each speaker with CHANNEL LEVEL "+", "−" to obtain equal sound level all around.

− : Decrease the output level.

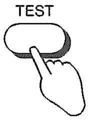
+ : Increase the output level.



The output levels can be varied within a range of −12 dB to +12 dB according to the output levels from the front speakers.

For your reference:

- If you have a sound level meter, set all speakers to 75 dB SPL (C-weighted/slow mode at seating position).
- To help you balance your speakers accurately, the test signal is output at a uniform volume and is not effected by volume control setting.



To stop the test signal

Press TEST.

For your reference

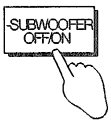
When you adjust speaker output level (steps 2–6), output level is automatically adjusted for not only the THX CINEMA mode but also the SURROUND and 3 STEREO modes.

Note

If you replace your front speakers after adjusting output level, playback balance may be lost depending on speaker efficiency.

If this happens, simply readjust output level.

If a subwoofer is not connected to this unit.

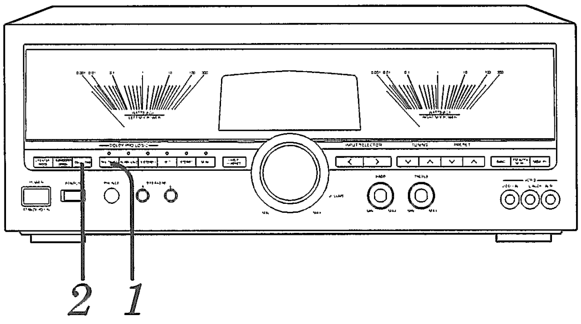


Hold down SUBWOOFER OFF/ON until "OFF" appears.

To return to the "ON" condition, hold down the button until the "ON" appears.

Adjusting the delay time

This adjustment reduces audible crosstalk from the surround speakers so that screen sounds such as dialogue will be correctly heard from their normal position at the front.

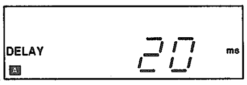


1

Press THX CINEMA to turn on the THX CINEMA mode.

2

Press DELAY TIME to set to the suitable time.

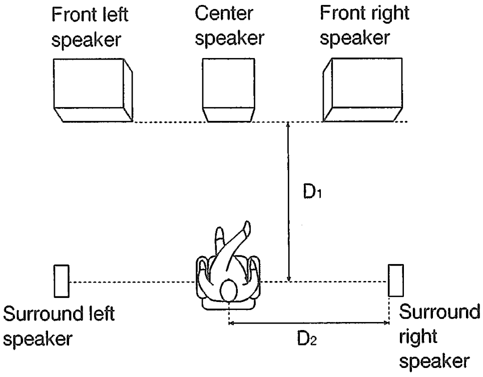


When the button is pressed, the current delay time is displayed. If you then hold it down, the delay time changes.

Each time you perform this combination, the delay time will increase by 5 ms within a range of 15 ms to 30 ms.

To calculate the delay time, refer to the calculation method below.

The standard setting is 20 ms.



D_1: Distance from front speakers

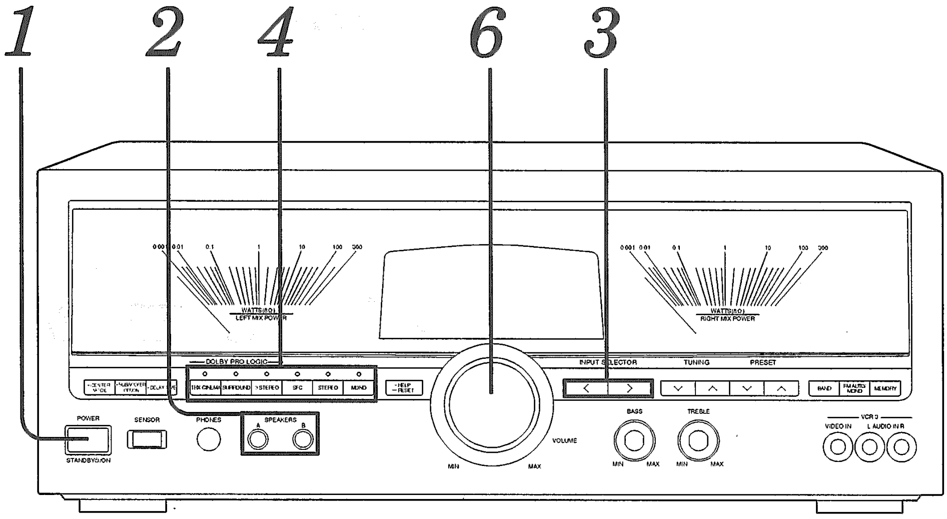
D_2: Distance from surround speakers

- **If D_1 is equal to or less than D_2**
  Set to 15 ms.
- **If D_2 is less than D_1**
  Start at 15 ms and increase by 5 ms for every 5 feet of difference between D_1 and D_2.

For your reference

When you adjust delay time (steps 1 and 2), delay time is automatically adjusted for not only the THX CINEMA mode but also the SURROUND mode.

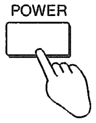
BASIC OPERATIONS


1
2
4
6
3
LEFT MIX POWER
RIGHT MIX POWER
DOLBY PRO LOGIC
INPUT SELECTOR
TUNING
PRESET
POWER
SENSOR
PHONES
SPEAKERS
A
B
STANDBY/ON
VOLUME
MIN
MAX
BASS
TREBLE
VCR 3
VIDEO IN
L AUDIO IN R

- Before operation, set VOLUME to the "MIN" position.
- Before operation, turn on the power supply for the TV and set the TV/VIDEO mode as described below.

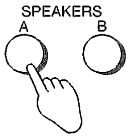
To enjoy videos or laser discs
Set it to VIDEO mode.
To watch TV
Set it to TV mode.

1/



Press POWER to switch on the power.

2/

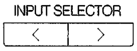

SPEAKERS
A
B

Press A or B to select the speaker system to be used.

Note

If using both speakers A and B at the same time, be sure to set the playback mode to "STEREO" (see step 4.).

3/


INPUT SELECTOR
<
>

Press INPUT SELECTOR (< or >) to select the desired source.

Each time you press this button, audio and video sources will be switched as follows.

TUNER → CD → TAPE → VCR 1 → VCR 2 → VCR 3 → VDP → VDP6CH → TV → TUNER

These indications correspond to termimals on the front and rear panels. Switch the displayed indication to the source you want to use.

Note

When you select "VDP6CH" as the input source, you do not have to perform step 4 because the playback mode is fixed for VDP6CH sources.

4/

Press to select the desired playback mode.

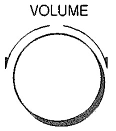
THX CINEMA: For motion picture program material recorded in the Dolby Surround format (See page 17.)
SURROUND: For program material recorded in the Dolby Surround format but which was not mixed in a film dubbing stage (See page 17.)
3 STEREO: For program material which has been recorded in the Dolby Surround format without the use of surround speakers (See page 17.)
SFC: For giving the music or movie presence and spread
STEREO: For CD's and tapes recorded in stereo
MONO: For monaural recordings

5/

Start the desired source.

- See page 21 for listening to radio broadcasts.
- See the appropriate operating instructions for operating optional equipments.

6/



Turn VOLUME to adjust the volume level.

For your reference
If you select THX CINEMA in step 4, you can reproduce the same volume used in dubbing stages by setting volume control to "REFERENCE".

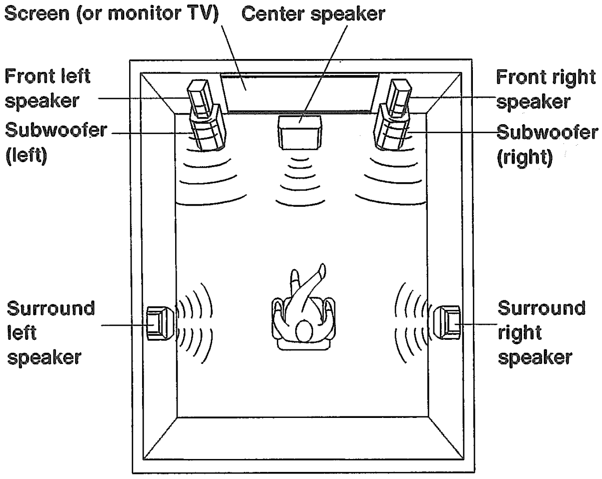
After listening is finished
Be sure to reduce the volume level, and switch the power to the standby condition by pressing POWER.

DOLBY PRO LOGIC modes

There are three modes of operation. BEFORE using any of them, be sure you make all the preparations explained on pages 9 and 10.

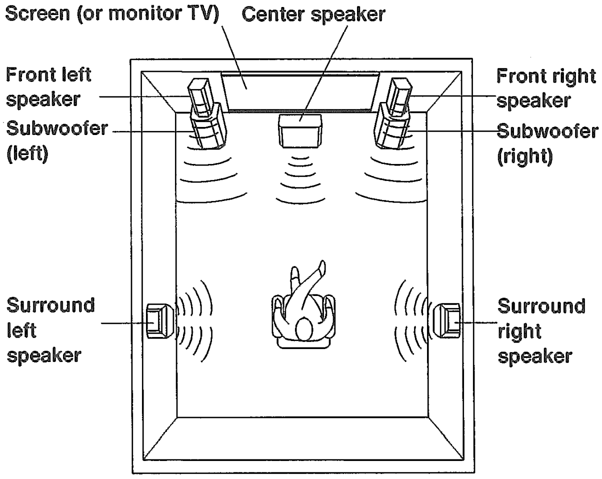
THX CINEMA

This mode faithfully reproduces motion picture program material which has been recorded in the Dolby Surround format.
It achieves this by recreating the sonic qualities of film studio sound recording stages (known as the dubbing stage).
Home THX systems provide home viewers with the same degree of sound quality as the THX theater sound systems created by Lucasfilm Ltd. By combining this sound with the picture on a wide screen, this mode lets you enjoy a true home sound system with full intensity and feeling of "being there".


Screen (or monitor TV)
Center speaker
Front left speaker
Subwoofer (left)
Front right speaker
Subwoofer (right)
Surround left speaker
Surround right speaker

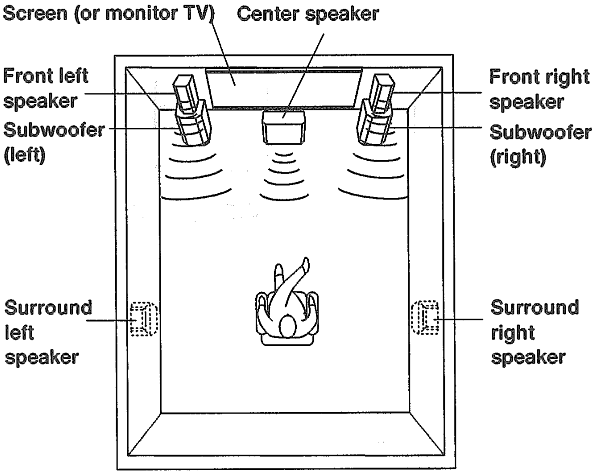
SURROUND

This mode is for program material which has been recorded in the Dolby Surround format but which was not mixed in a film dubbing stage. By reproducing the feeling of depth and movement of sound, video software or compact discs recorded with Dolby Surround provide the listener with a feeling of "being there".


Screen (or monitor TV)
Center speaker
Front left speaker
Subwoofer (left)
Front right speaker
Subwoofer (right)
Surround left speaker
Surround right speaker

3 STEREO

This mode reproduces program material which has been recorded in the Dolby Surround format without the use of surround speakers. Also music and news programs can be heard with better clarity and localization.


Screen (or monitor TV)
Center speaker
Front left speaker
Subwoofer (left)
Front right speaker
Subwoofer (right)
Surround left speaker
Surround right speaker

Manufactured under license from Dolby Laboratories Licensing Corporation.
DOLBY, the double-D symbol DD and "PRO LOGIC" are trademarks of Dolby Laboratories Licensing Corporation.

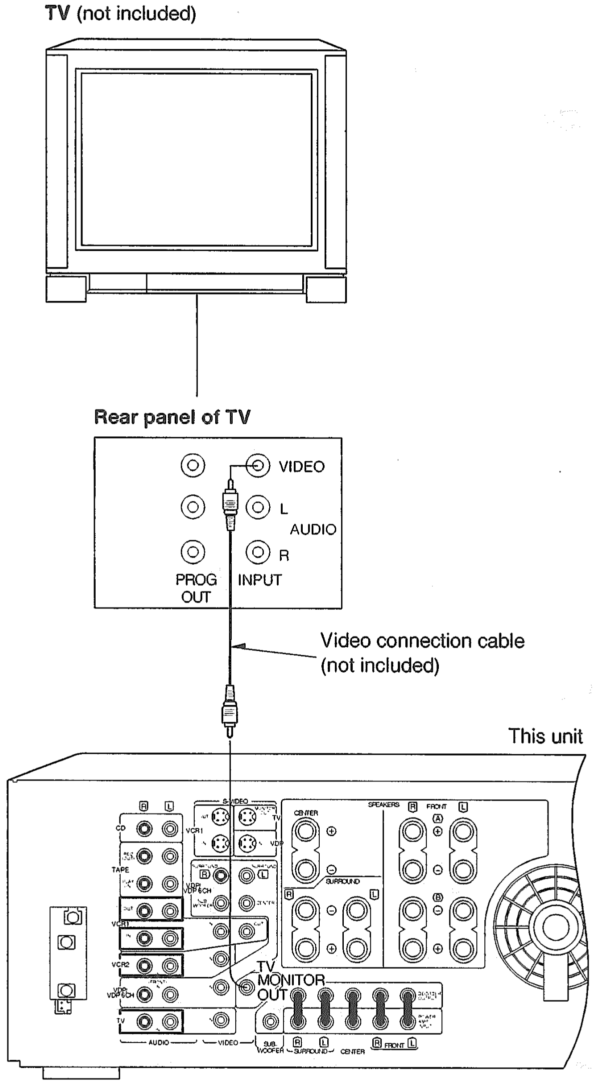
ON-SCREEN DISPLAY FUNCTION

The On-Screen Display function can provide a wide range of information on a TV screen, thus making operation easier.
For example, by pressing the button(s), the state of each setting will display. If there is no sound and you do not understand why, press the HELP button to display an outline drawing of the unit and applicable operating procedures on the TV.

Before trying to display anything
- Check your receiver is connected from "TV MONITOR OUT" on the rear panel to "VIDEO INPUT" on the TV rear panel.
- Turn on the power supply for the TV and set the TV to the video mode.

Note

When using a TV with an S-VIDEO terminal, see page 6.



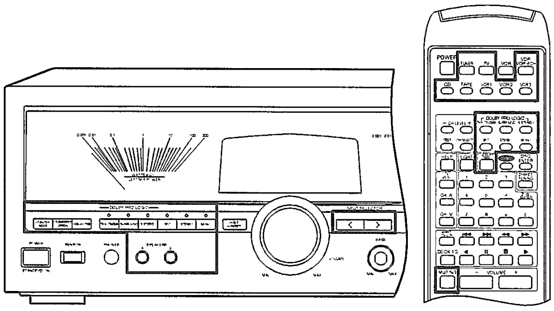
Types of displays for TV screens

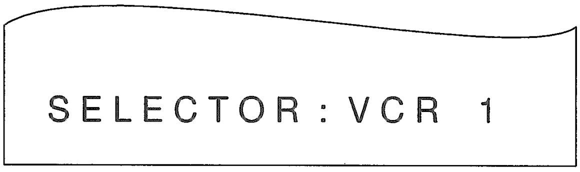
There are 5 different types of displays that appear on the TV.

1 Simple stereo operation displays

These displays mirror operation as you press buttons.

They are directly superimposed over the picture while you watch and operate your receiver, except, of course, if no picture is projected, then a blue background is produced.
Messages are displayed only when you operate the below controls.





SELECTOR : VCR 1

In this example, the VCR1 has been selected as the input source.

Note

While muting is ON, the message "MUTING ON NOW" is displayed. The box and wording are alternately highlighted to call your attention to the fact that the sound has been muted.

Auto HELP

The following messages run across the TV screen when you turn ON the power to the receiver, if your receiver is set as described below.

Receiver setting	Messages
Both speakers A and B are OFF	SPEAKERS OFF NOW

To turn OSDs (On–screen display) ON/OFF

Hold down the FM AUTO/MONO button on the main unit for a moment. Every time you hold the button down, the function switches between ON and OFF. On the TV, OSD ON and OSD OFF will be displayed as you make your selection.
REMEMBER the FM AUTO/MONO button turns ON/OFF the simple stereo operation displays only and has nothing to do with other displays mentioned in this section.

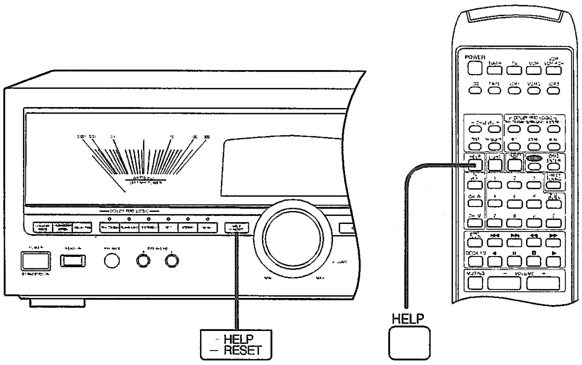
Types of displays for TV screens

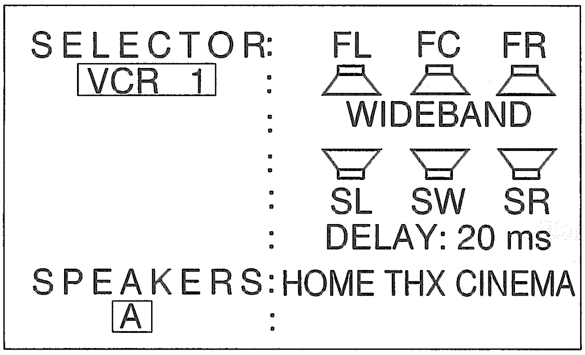
2 *Basic control status display*

This display lets you get a quick view of your present settings.

Though basic, it puts the status of the settings below on a single screen, in front of a blue background, for your review.
To view, press the HELP button. (Touch only.)
Pressing again turns off the display.

- Currently set input source
- Selected speaker systems
- Dolby Pro Logic/SFC/STEREO/MONO/VDP6CH modes





SELECTOR: FL FC FR
VCR 1 : WIDEBAND
: SL SW SR
: DELAY: 20 ms
SPEAKERS: HOME THX CINEMA
A :

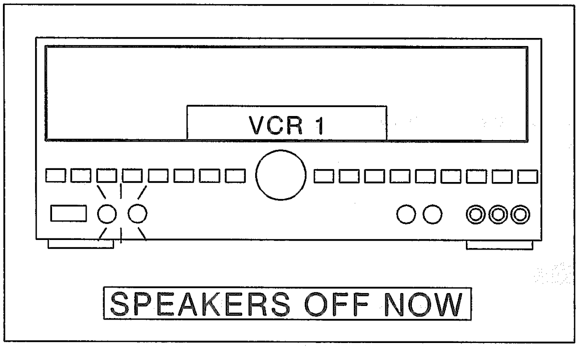
In this example, VCR1 has been selected as the input source, speaker A is selected, delay time is 20 ms, the DOLBY PRO LOGIC THX CINEMA mode is ON and the WIDEBAND is selected as the center mode.

When you're having trouble operating your receiver, the help display appears when you press the HELP button (Touch only). (See "Help displays" at the right.)

3 *Help displays*

These displays promptly advise you on what to do when you're having trouble operating your receiver, for example, when no sound comes out.
To get help, press the HELP button (Touch only). The button you need to operate will start flashing on the illustration and information you'll want to know will be highlighted on a green background.

Example 1



VCR 1

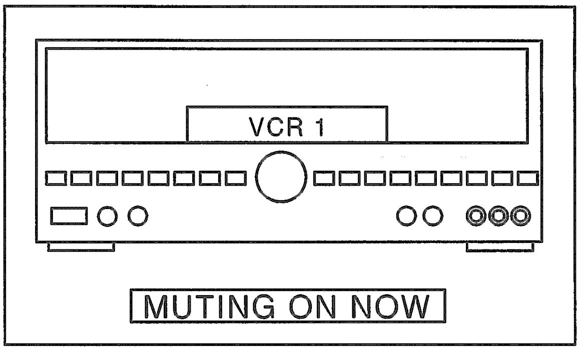
SPEAKERS OFF NOW

In this example, sound is not coming out because the speaker select buttons are both OFF.

Note

In the above example, after the message shown is displayed, the message "SELECT SPEAKER A OR B" runs across the screen from right to left, instructing you how to gain back the sound.

Example 2



VCR 1

MUTING ON NOW

In this example, sound is not coming out because muting is ON.

Note

In the above example, after the message is displayed, the message "PRESS THE MUTING BUTTON ON REMOTE CONTROLLER" runs across the screen from right to left, instructing you how to gain back the sound.

If you press the wrong button or do something the receiver won't let you, the message "ERROR" will be shown on the receiver's display. At the same time, the message "PLEASE PRESS THE HELP BUTTON" will run across the TV screen.
In such a case, press the HELP button (Touch only). A worded message explaining how to fix the trouble will run across the display while the button you need to press will flash on the illustration also.

■ When you wrongly input the frequency in direct tuning

The message "ENTER CORRECT FREQUENCY" will run across the screen.

■ When you try turning ON both speaker A and B while Dolby Pro Logic (THX CINEMA, SURROUND, 3 STEREO), SFC or MONO is ON

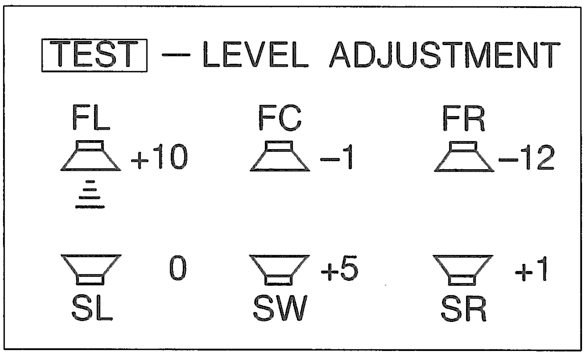
The message "PRESS THE STEREO BUTTON OR SELECT ONLY SPEAKER A OR B" will run across the screen.

■ When you try turning ON either Dolby Pro Logic (THX CINEMA, SURROUND, 3 STEREO), SFC or MONO while both speaker A and B are ON

The message "TURN OFF SPEAKER A OR B" will run across the screen.

4 *Output test display*

This display is handy when adjusting speaker output level especially if you're using Dolby Pro Logic (THX CINEMA, SURROUND, 3 STEREO) and VDP6CH.
As each speaker emits the test signal, that speaker's icon is highlighted on the TV. The display follows the sequence the speakers do, unless of course, you select a particular speaker, then it returns to that speaker's icon.



In this example, the THX CINEMA mode has been selected and the test signal is being emitted by the front left speaker.

Note

While you adjust output level, the test signal is produced only from the speaker you are now adjusting. At the same time, the display stops on that speaker's icon and a volume bar indicating output in dB appears. The level then changes as you adjust output.

5 *Overload display*

When this message is displayed, you have overloaded your system.

Probable cause(s)
The protection circuitry has functioned because the positive and negative speaker connection wires are "shorted". Speaker systems with an impedance less than the indicated rated impedance of this unit are used or under severe use, such as loud volume, excessive power and in an excessively hot environment.

The "OVERLOAD" message will appear on a red background. When this display comes up, switch off the power, and after determining and correcting the cause, switch ON the power once again.

OVERLOAD

SWITCH OFF POWER

■SERVICE MODE

Turn ON the power button simultaneously pressing "POWER", "SP A" and "MONO" buttons as shown in **Fig.1**.

↓

"SURR" appears in the display as shown in **Fig.2.**

↓

Press the button "CHANNEL LEVEL(+) or (-)" on the remote control transmitter as shown in **Fig.3.**

↓

The numbers appears in the display (min. -12 ~ max.+12) as shown in **Fig.4.**

↓

Amplifier circuit is "OK".

Note: To cancel, turn the power button OFF.

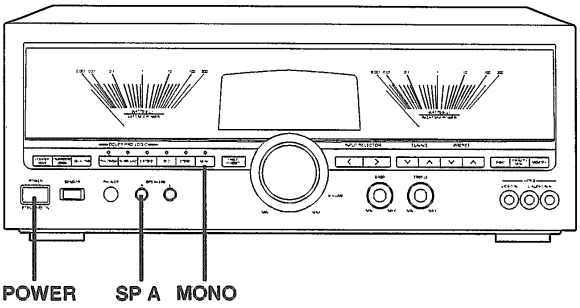


Fig.1

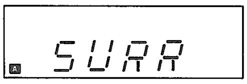


Fig.2

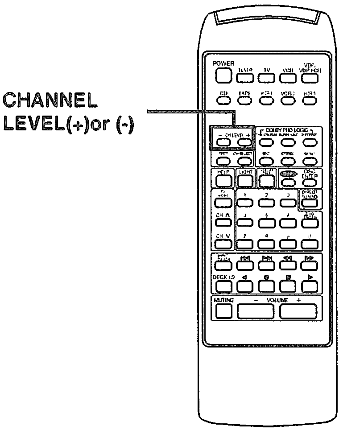


Fig.3

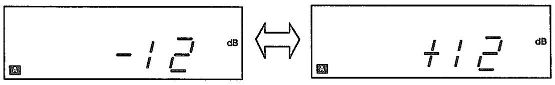


Fig.4

■REMOTE CONTROL OPERATION

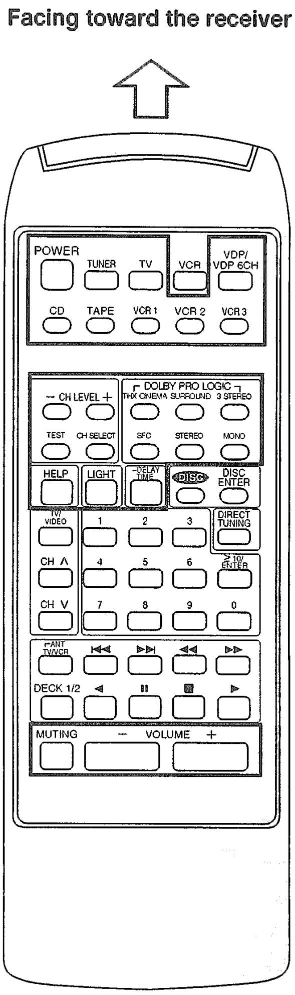
This remote control transmitter can be used to operate other units manufactured by this company in addition to this receiver, including TVs and VCRs manufactured since 1985, CD changers (or CD players), tape decks and laser disc players.
It is also possible to change over the remote control code so that the remote control transmitter can operate TVs, VCRs and laser disc players which have not been manufactured by this company.

Preparations before use

Connect the power cords of a CD changer (or CD player) and a tape deck as shown on page 7.

If the connections are made and the power supply switches of each unit are set to ON, the power supply for each unit will simultaneously turn ON and OFF when the power supply of the receiver is turned ON and OFF.

To operate the receiver


Facing toward the receiver
POWER
TUNER
TV
VCR
VDP/ VDP 6CH
CD
TAPE
VCR 1
VCR 2
VCR 3
− CH LEVEL +
DOLBY PRO LOGIC
THX CINEMA
SURROUND
3 STEREO
TEST
CH SELECT
SFC
STEREO
MONO
HELP
LIGHT
DELAY TIME
DISC
DISC ENTER
TV/ VIDEO
1
2
3
DIRECT TUNING
CH ∧
4
5
6
≥10/ ENTER
CH ∨
7
8
9
0
ANT TV/VCR
DECK 1/2
MUTING
− VOLUME +

Basic operations

To turn the power supply ON/OFF	TUNER ▭ ➡ POWER ▭ Once the power has been set to ON, it can be turned ON and OFF simply by pressing POWER. (See **Note** below.)
To select an input source	TUNER ▭ TV ▭ VDP/ VDP 6CH ▭ CD ⬭ TAPE ⬭ VCR 1 ⬭ VCR 2 ⬭ VCR 3 ⬭ Each time you press the VDP/VDP6CH button, "VDP" and "VDP6CH" will be switched alternately.
To select the desired playback mode	THX CINEMA ⬭ SURROUND ⬭ 3 STEREO ⬭ SFC ⬭ STEREO ⬭ MONO ⬭ Each time you press the SFC button, you can change the SFC mode.
To output a test signal	When the THX CINEMA, SURROUND, 3 STEREO or VDP6CH mode is ON TEST ⬭ Press once more to stop the test signal.
To adjust the output level of each speaker	CH SELECT ⬭ ➡ − CH LEVEL + ⬭ ⬭ or (See pages 9 and 10.) TEST ⬭ ➡ − CH LEVEL + ⬭ ⬭
To adjust the delay time	DELAY TIME ▭ Press and hold the button to change the delay time.
To display basic control status and procedures for remedying trouble	HELP ▭
To mute the sound level	MUTING ▭ Press once more to return to the original volume.
To adjust the volume level	− VOLUME + ▭ ▭
To turn the power meter light OFF/ON	LIGHT ▭

Note

After carrying out the operations for turning the power of the TV, VCR or laser disc player ON or OFF, always press TUNER before pressing POWER when turning the power of the receiver ON and OFF.

OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURE

NOTE

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Select items from the following index when checks or replacement are required.**
4. **Illustrated screws are equivalent to actual size.**
5. **Refer the parts No. on the page of "Main Component Replacement Procedures", if necessary.**

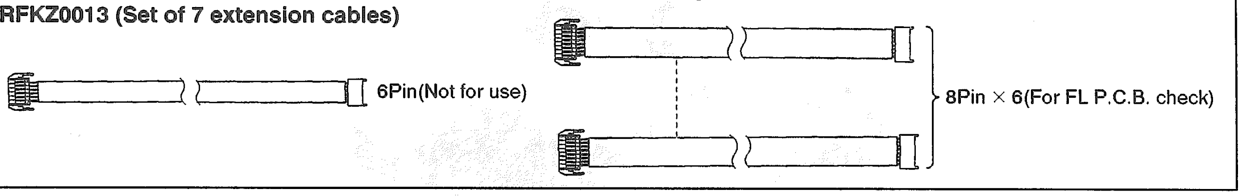
• Contents

- **Checking Procedure for each P.C.B.** Page.
1. Checking for the tuner P.C.B., IN/OUT terminal P.C.B. and video terminal P.C.B.. ...... 17,18.
2. Checking for the digital P.C.B. and FL panel P.C.B.. ...... 19.
3. Checking for the main P.C.B.. ...... 20.

- **Main Component Replacement Procedures**
1. Replacement for the meter ass'y. ...... 21.
2. Replacement for the fan motor. ...... 22.
3. Replacement for the power IC and regulator transistor. ...... 22~24.
- **Lead wire and flat cable arrangement** ...... 24.

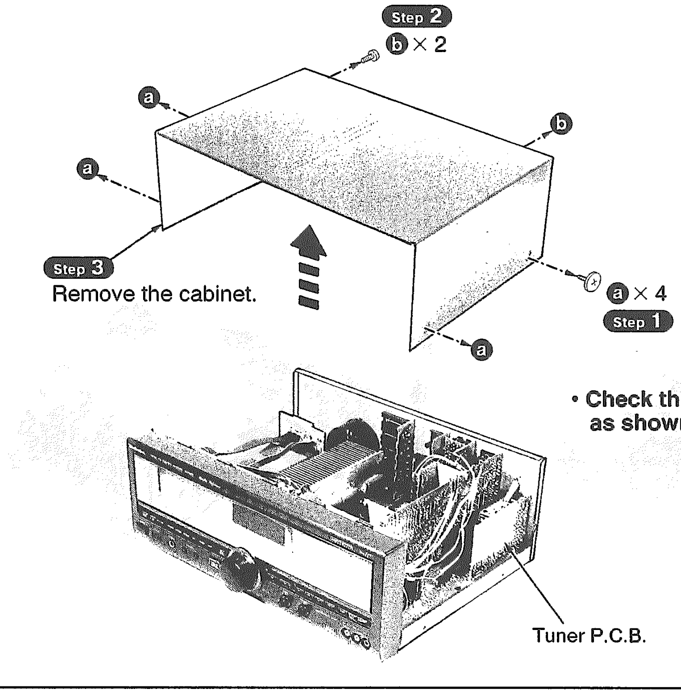
• The following extension cable kits is necessary to check the unit's P.C.B.

- **RFKZ0013 (Set of 7 extension cables)**

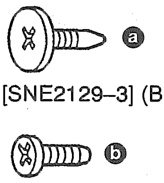


Checking Procedure for each P.C.B.

1. Checking for the tuner P.C.B., IN/OUT terminal P.C.B. and video terminal P.C.B.

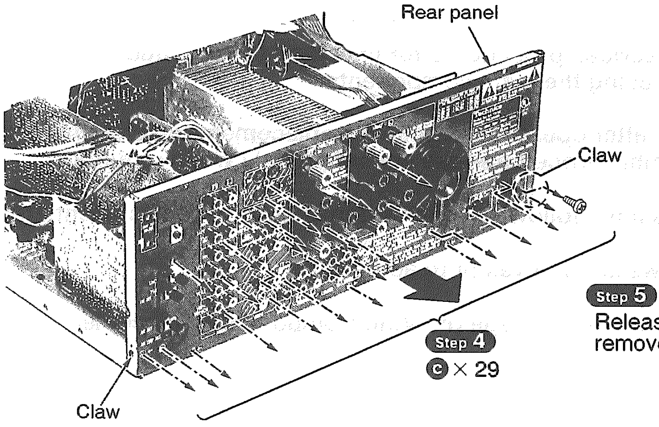


• **Check the tuner P.C.B. as shown below.**



[SNE2129–3] (Black)

[XTBS3+8JFZ1] (Black)

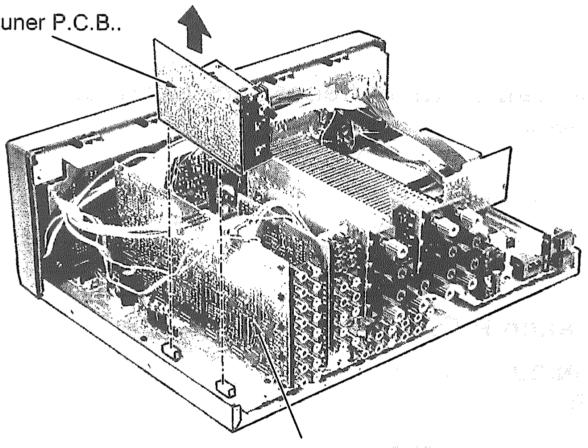

Rear panel
Claw
Claw

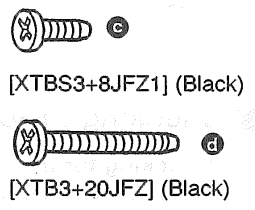
Step 4
ⓒ × 29

Step 5
Release the claws, and then remove the rear panel.

Step 6
Pull out the tuner P.C.B..

- **Check the IN/OUT terminal P.C.B. as shown below.**


IN/OUT terminal P.C.B.

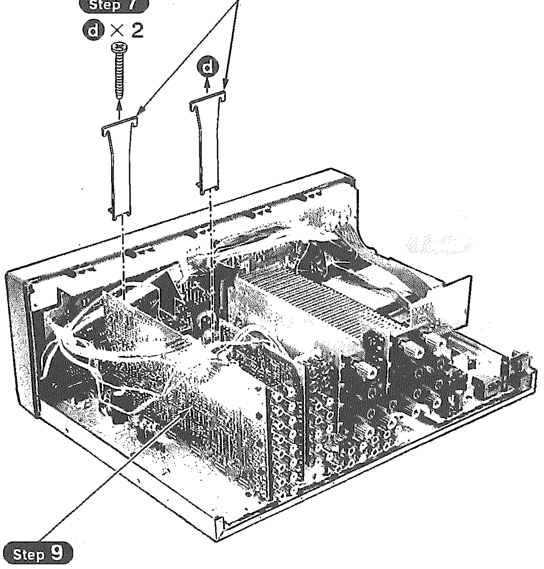


ⓒ [XTBS3+8JFZ1] (Black)

ⓓ [XTB3+20JFZ] (Black)

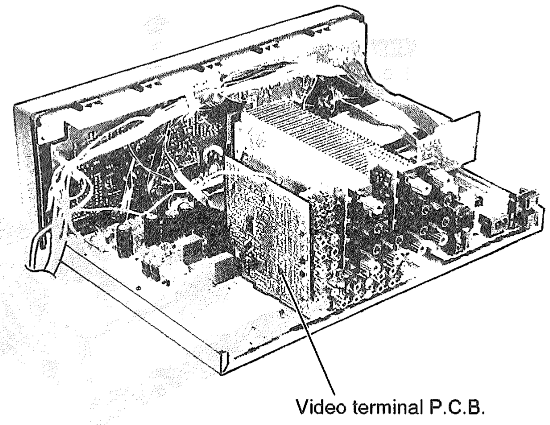
Step 7
ⓓ × 2

Step 8
Remove the hold ornament.



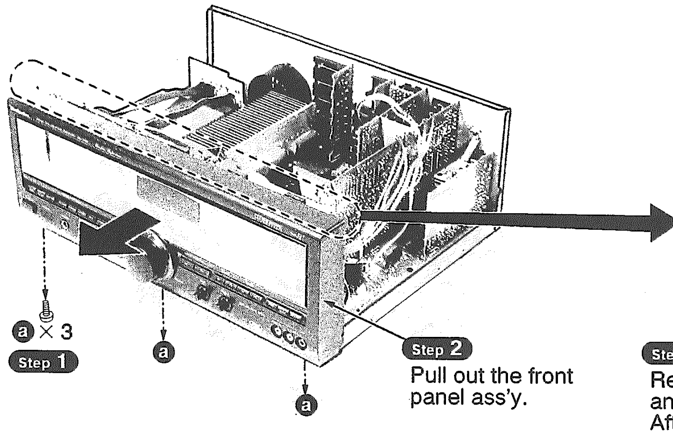
Step 9
Pull out the IN/OUT terminal P.C.B..

- **Check the video terminal P.C.B. as shown below.**

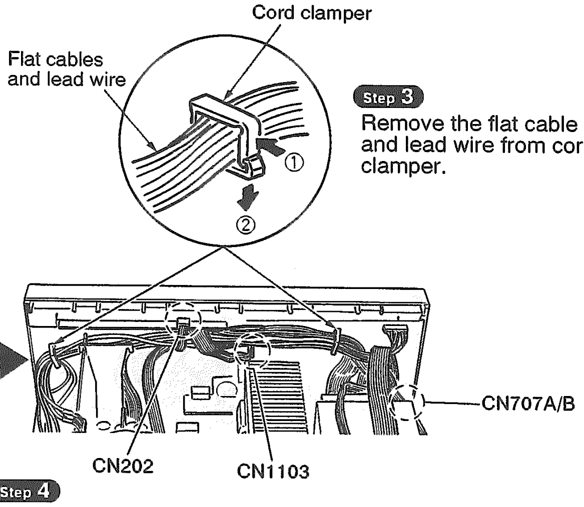

Video terminal P.C.B.

2. Checking for the digital P.C.B. and FL panel P.C.B.

- Follow the **Step 1** ~ **Step 3** in item 1 on checking procedure for each P.C.B. on page 17.

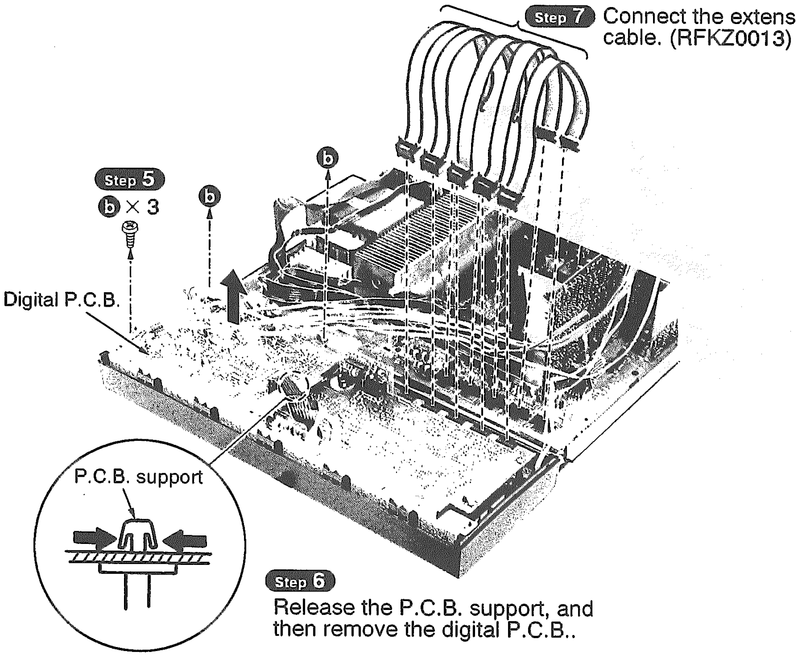


Step 2 Pull out the front panel ass'y.


Cord clamper
Flat cables and lead wire
①
②
CN707A/B
CN202
CN1103

Step 3 Remove the flat cable and lead wire from cord clamper.

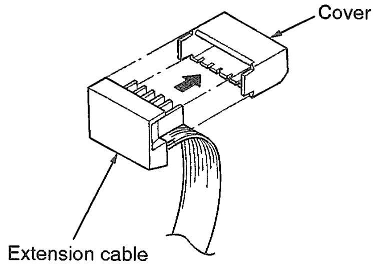
Step 4 Remove the 3 connectors(CN202,CN707A/B,CN1103), and then release the lead wire arrangement.
After releasing the lead wires, reinstall the 3 connectors (CN202,CN707A/B,CN1103)


Step 5
ⓑ × 3
ⓑ
ⓑ
Digital P.C.B.
P.C.B. support

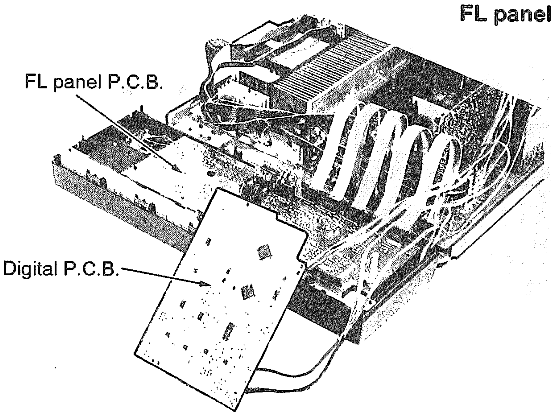
Step 7 Connect the extension cable. (RFKZ0013)

Step 6 Release the P.C.B. support, and then remove the digital P.C.B..

NOTE
Remove the cover of extension cable.


Cover
Extension cable

- **Check the digital P.C.B. and FL panel P.C.B. as shown below.**

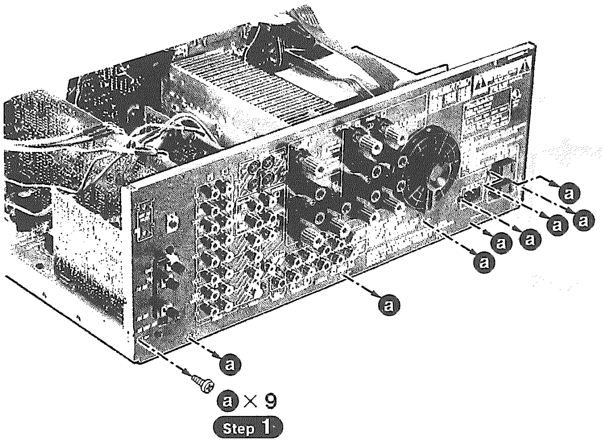

FL panel P.C.B.
Digital P.C.B.

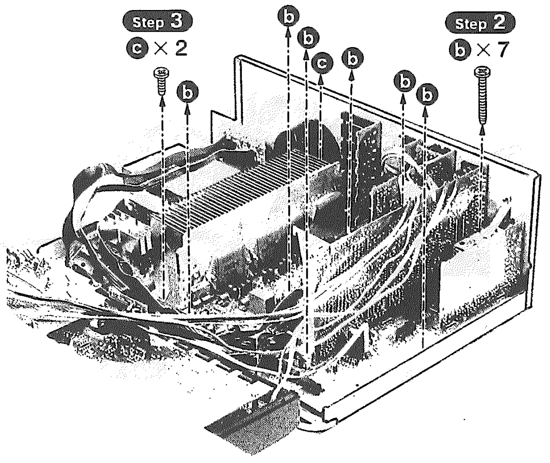
[XTBS3+8JFZ1] (Black)

[XTBS26+8J] (Black)

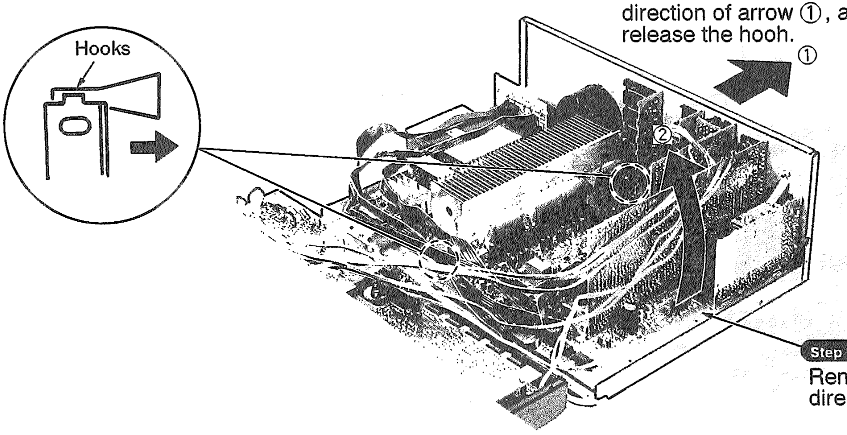
3. Checking for the main P.C.B.

- Follow the Step 1 ~ Step 3 in item 1 on checking procedure for each P.C.B. on page 17.
- Follow the Step 1 ~ Step 4 in item 2 on checking procedure for each P.C.B. on page 19.



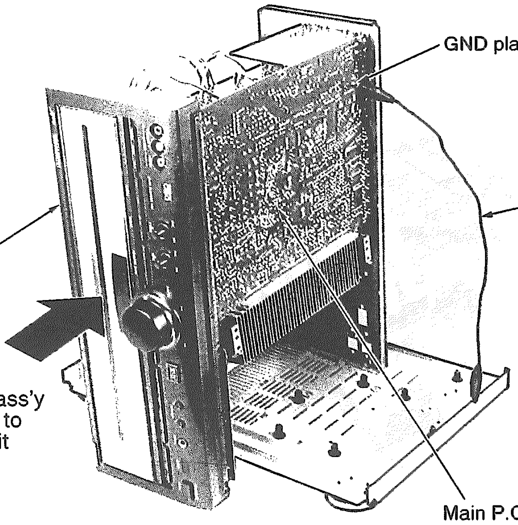


Step 4
Slide the main P.C.B. in the direction of arrow ①, and the release the hooh.



Step 5
Remove the main P.C.B. in the direction of arrow ②.

- **Check the main P.C.B. as shown below.**



Step 7
Connect the lead wire.

Step 6
Connect the front panel ass'y of the P.C.B. connectors to the main P.C.B. and set it as the illustration right.

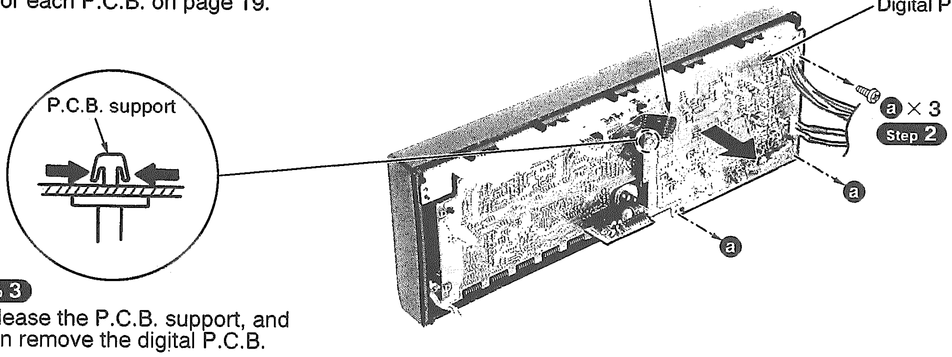
[XTBS3+8JFZ1] (Black)

[XTB3+2JFZ] (Black)

Main Component Replacement Procedures

1. Replacement for the meter ass'y

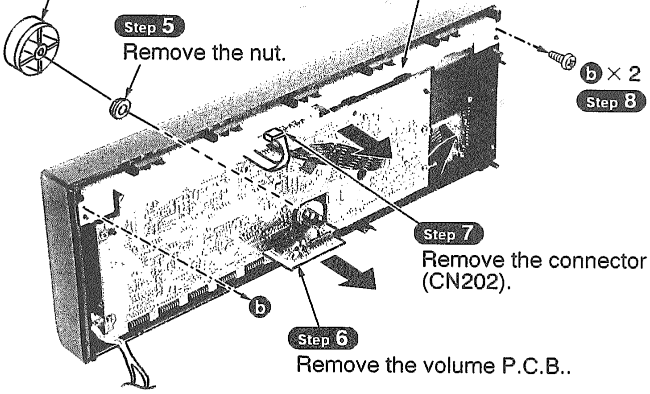
- Follow the Step 1 ~ Step 3 in item 1 on checking procedure for each P.C.B. on page 17.
- Follow the Step 1 ~ Step 4 in item 2 on checking procedure for each P.C.B. on page 19.


P.C.B. support
Digital P.C.B.
a × 3
a
a

Step 1
Remove the connector (CN1103).

Step 2

Step 3
Release the P.C.B. support, and then remove the digital P.C.B.



Step 4
Pull out the volume knob.

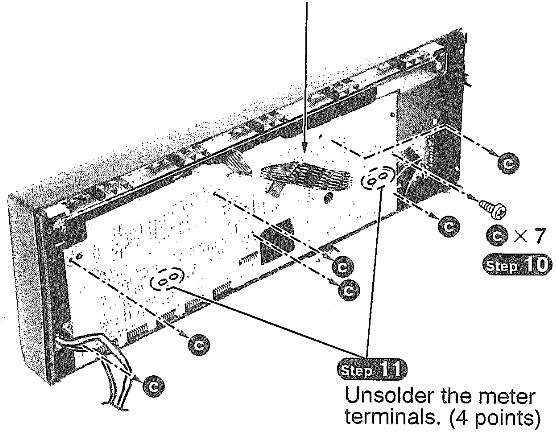
Step 5
Remove the nut.

Step 6
Remove the volume P.C.B..

Step 7
Remove the connector (CN202).

Step 8

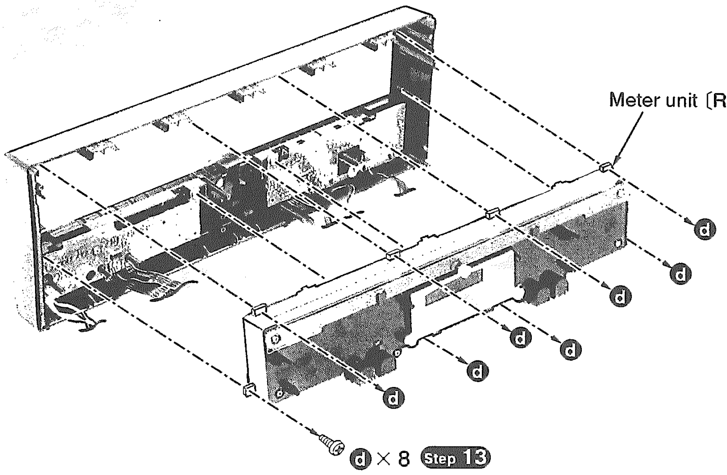
Step 9
Remove the lamp angle.



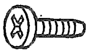
Step 10

Step 11
Unsolder the meter terminals. (4 points)

Step 12
Remove the FL panel P.C.B..


Meter unit [RSE0006A]
d
d
d
d
d
d
d
d × 8

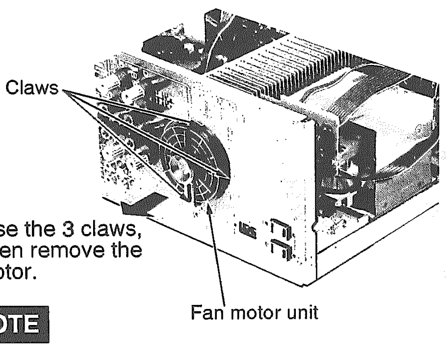
Step 13



[XTBS26+8J]

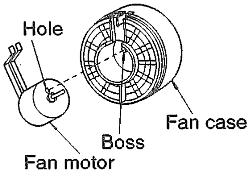
2. Replacement for the fan motor

- Follow the Step 1 ~ Step 3 in item 1 on checking procedure for each P.C.B. on page 17.

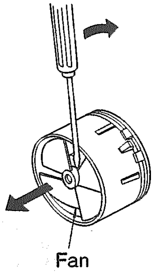

Claws
Fan motor unit

Step 1
Release the 3 claws, and then remove the fan motor.

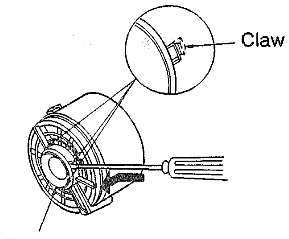
NOTE
When replacing the fan motor, align the boss of the fan case with the hole of the fan motor.


Hole
Fan case
Boss
Fan motor

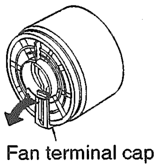
Step 2
Put a screwdriver at the root of the fan and remove it.



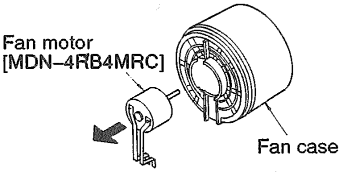
Step 3
Remove the fan cap.


Claw
Fan cap

Step 4
Remove the fan terminal cap.


Fan terminal cap

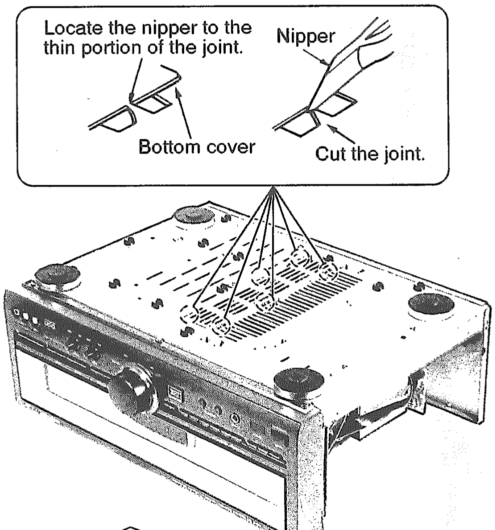
Step 5
Remove the fan motor.


Fan motor
[MDN-4RB4MRC]
Fan case

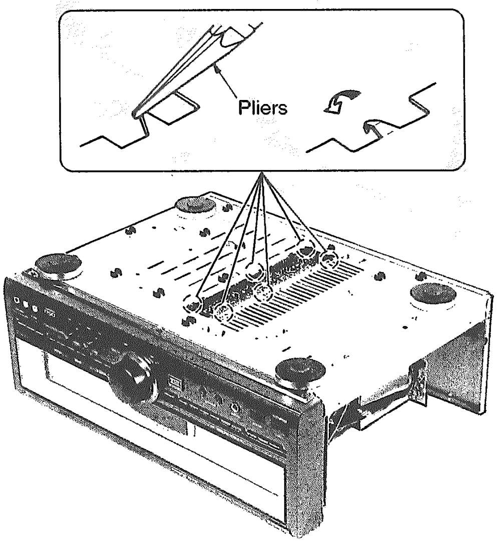
3. Replacement for the power IC and regulator transistor

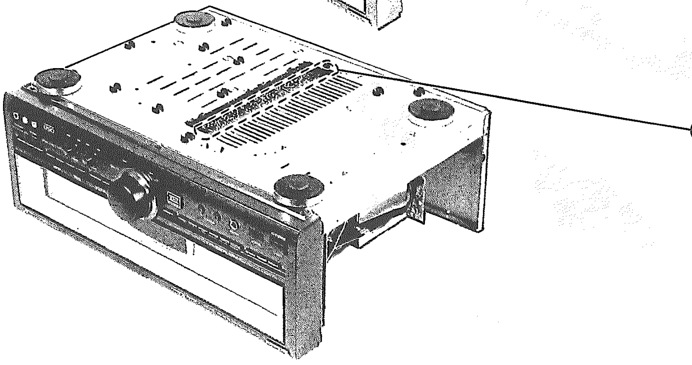
- Follow the Step 1 ~ Step 3 in item 1 on checking procedure for each P.C.B. on page 17.

Step 1 Cut the joints as shown below.(6 portions)

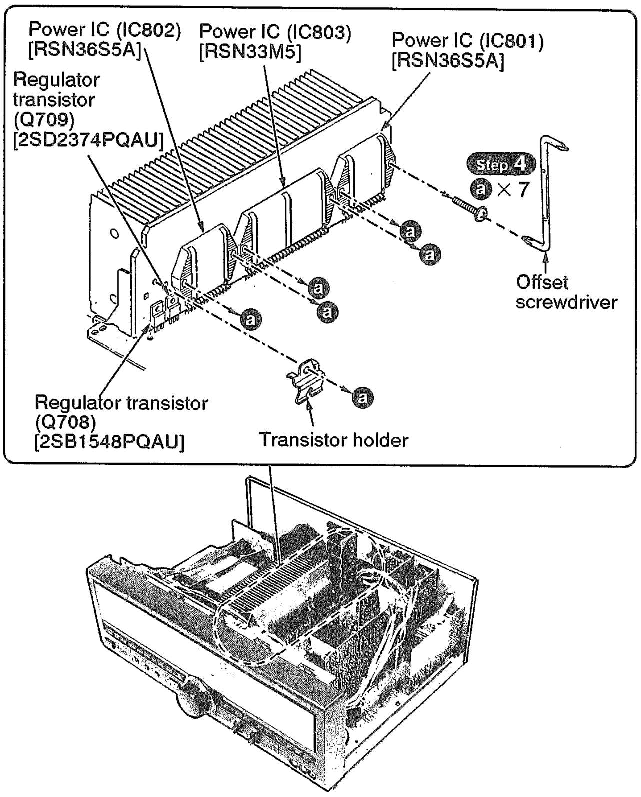

Locate the nipper to the thin portion of the joint.
Nipper
Bottom cover
Cut the joint.

Step 2 Fold the joints.(6 portions)





Step 3
Unsolder the terminals of powerIC and regulator transistor.


Power IC (IC802)
[RSN36S5A]
Power IC (IC803)
[RSN33M5]
Power IC (IC801)
[RSN36S5A]
Regulator transistor
(Q709)
[2SD2374PQAU]
Step 4
a × 7
a
a
a
a
a
a
Offset screwdriver
Regulator transistor
(Q708)
[2SB1548PQAU]
Transistor holder

CAUTION

1. After replceing the power IC or regulator transistor,apply a sufficient quantity of compound grease (RFKX0002) between the heat sink and the power IC or regulator transistor (Radiation of power IC).
2. Tighten enough the screws (ⓐ) after replacing the power IC and regulator transisitor. Otherwise, the heat rabiation works little.
3. When installing or removing the power IC or transistor holder, be sure to use an offset screwdriver.

- A long straight screwdriver cannot be used for removal or mounting since its long grip interferes with the neighboring P.C.B.(See Fig.1)
- A short straight screwdriver may be used for removal, but cannot be used for mounting because the limited space in the unit will not allow sufficient tightening torque.
(See Fig.2)

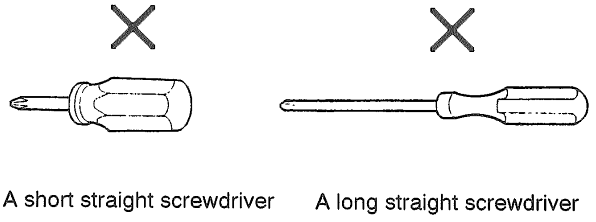
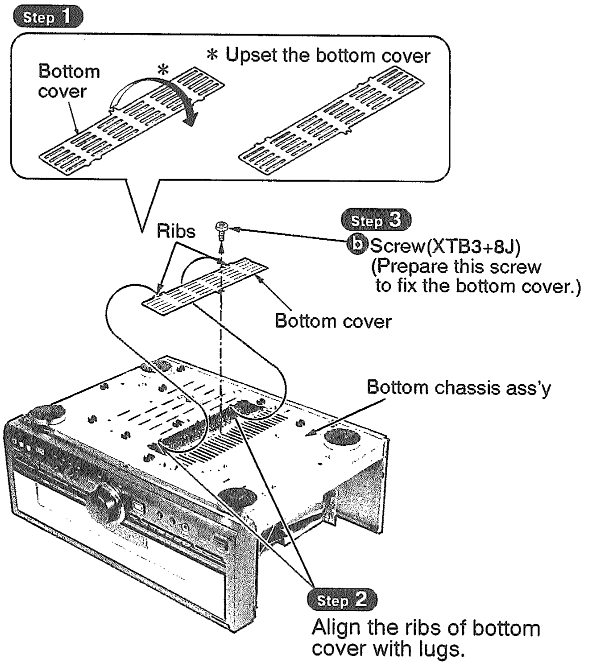
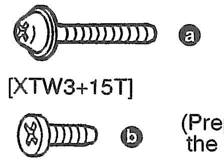

×
×
A short straight screwdriver
A long straight screwdriver

Fig.2

- Insufficient tightening will cause poor heat dissipation from the power IC and regulator transistor and, in the worst case, may lead their thermal breakdown.
(See Fig.2)

Installation of the bottom cover after replacement


Step 1
Bottom cover
* Upset the bottom cover
*
Ribs
Step 3
ⓑScrew(XTB3+8J)
(Prepare this screw to fix the bottom cover.)
Bottom cover
Bottom chassis ass'y
Step 2
Align the ribs of bottom cover with lugs.


ⓐ
[XTW3+15T]
ⓑ
(Prepare this screw to fix the bottom cover.)
[XTB3+8J](Black)

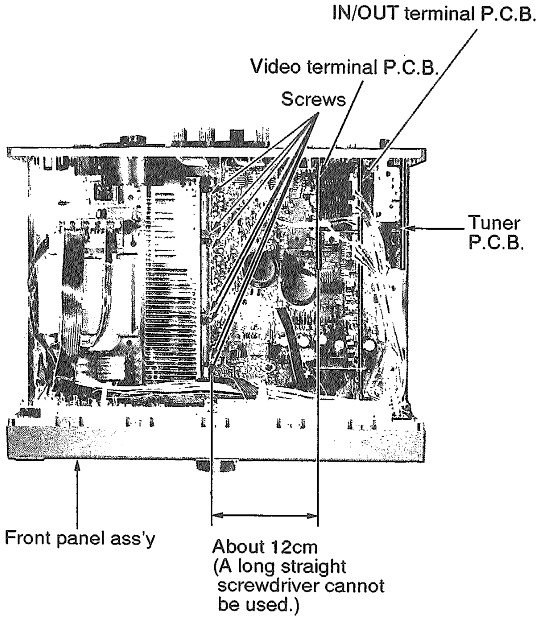
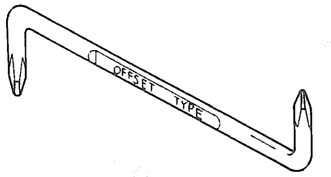

IN/OUT terminal P.C.B.
Video terminal P.C.B.
Screws
Tuner P.C.B.
Front panel ass'y
About 12cm
(A long straight screwdriver cannot be used.)

Fig.1

——OFFSET SCREWDRIVER——

- The PROTO offset screwdriver No.34-¼ is recommended for use in the application above.


OFFSET TYPE

No.	⊕	|← L →|
34¼	1 & 2	4¾"

- The address of PROTO International Sales is as follows.

International Sales

International Sales Office
Stanley-Proto Industrial Tools
14117 Industrial Park Blvd.
Covington, GA 30209 U.S.A.
Fax: 706-786-4387
Phone: 706-787-3800

Australia, New Zealand &
South Pacific
Stanley-Proto Industrial Tools
P.O.Box 10
400 Whitehorse Road
Nunrweding 3131
Victoria, Australia
Fax: 61-3-894-1173
Phone: 61-3-878-9244

Singapore, Indonesia,
Philippines, Korea, Hong
Kong, Malaysia, China.
Stanley-Proto Asia Pacific
12 Gul Drive
Singapore 2262
Fax: 65-861-3206
Phone: 65-862-0883

Thailand
Stanley-Proto Thailand Ltd.
1017 Moo 13 Bangnatrad
Highway, Tambol Bankaew
Amphur Bangplee
Samutprakarn, Thailand
Fax: 66-2-316-6071
Phone: 66-2-316-8655

Japan
Stanley Works Japan
2-7-16 Hyakunin-Cho
Shinjuku-ku
Tokyo 160 Japan
Fax: 81-3-3360-8456
Phone: 81-3-3360-8458

Mexico
Herramientas Stanley S.A.
DE C.V.
Apartado Postal 675
72030 Puebla, Pue, Mexico
Fax: 52-22-494-4880
Phone: 52-22-495-300

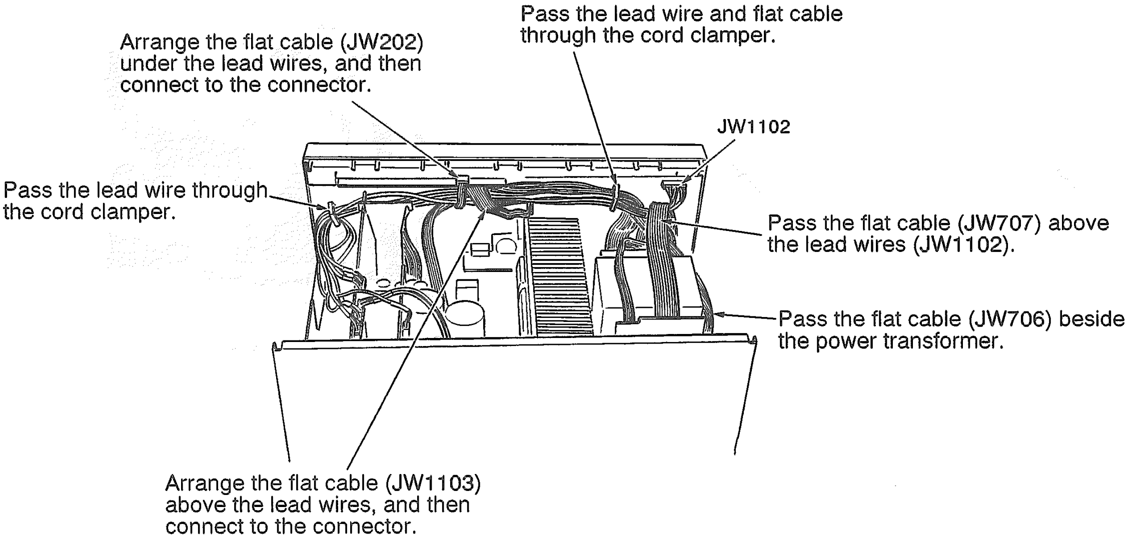
South & Central America,
Puerto Rico, The Caribbian
Stanley Inter-America
2101 N.W. 84th Ave.
Miami, Florida 33122
Fax: 305-594-4261
Phone: 305-591-3828

Europe
Stanley-Proto Europe
Woodside, Sheffield
539PD
England
Fax: 44-742-739-038
Phone: 44-742-768-888

Canada
Stanley-Proto Canada
1100 Corporate Drive
Burlington, Ontario
Canada, L7L 5R6
Fax: 416-335-0075
Phone: 416-335-0075

Middle East, Mediterranean
& Africa
Stanley-MEMA
Cory House The Ring
Bracknell Berkshire
RG 12 1A2
England
Fax: 44-344-485-526
Phone: 44-344-51813

Lead wire and flat cable arrangement


Pass the lead wire and flat cable through the cord clamper.
Arrange the flat cable (JW202) under the lead wires, and then connect to the connector.
JW1102
Pass the lead wire through the cord clamper.
Pass the flat cable (JW707) above the lead wires (JW1102).
Pass the flat cable (JW706) beside the power transformer.
Arrange the flat cable (JW1103) above the lead wires, and then connect to the connector.

■PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned ON.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier is used.

If this occurs, follow the procedure outlined below:

1. Turn OFF the power.
2. Determine the cause of the problem and correct it.
3. Turn ON the power again after one minute.

Note:
When the protection circuitry functions, the unit will not operate unless the power is turned OFF first and then ON again.

■BEFORE REPAIR AND ADJUSTMENT

Disconnect AC power, Discharge both Power Supply Capacitors C711(4700μF), C718~721(3300μF), C722/ 723(15000μF) and C729(1000μF) through a 10Ω, 5W resistor to ground. DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices. After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at 120V, 60Hz in NO SIGNAL mode should be 450~850mA.

■MEASUREMENTS AND ADJUSTMENTS

Control positions and equipment used.

- BASS, TREBLE knob .... Center
- INPUT SELECTOR .... CD
- AF Oscillator
- AC EVM (Electronic Voltmeter)

- **POWER METER ADJUSTMENT**

1. Confirm the meter indicators, as shown in **Fig. 1**.
2. Connect an AF oscillator and AC EVM to the unit, as shown in **Fig. 2**.
3. Turn the power on to the unit and apply a signal (**1kHz**) from the CD terminal as shown in **Fig. 2**.
4. Adjust the volume control so that the output level of a signal (**1kHz**) from the speakers terminals is within the range of **2.76~2.90V** (LR= ∞ or 8Ω).
5. Adjust **VR350** (Rch) and **VR351** (Lch) until the power meter reads 1W, as shown in **Fig. 3**.

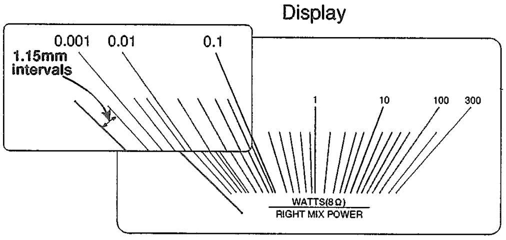


Fig. 1

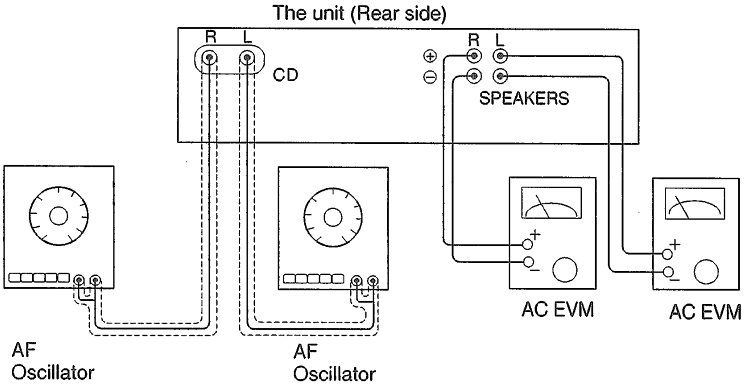


Fig. 2.

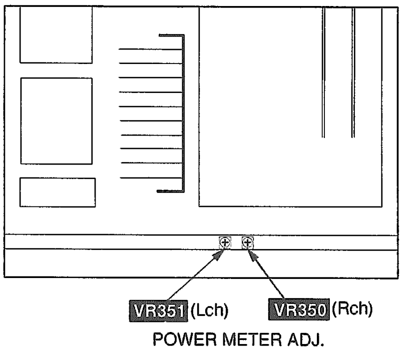


Fig. 3.

■FAN MOTOR TROUBLESHOOTING GUIDE

The Model SA-TX50 employ fan motor error sensing electronics.
If the cooling fan is not operation and "OVER LOAD" is displayed on the FL display, check the fan motor and its driving circuit.

"OVERLOAD" is displayed on the FL display.

Is the air cooling path blocked or the fan motor jammed by any external obstacle?

YES

Remove the obstacle.

NO

Remove the fan from the unit.

Is the fan motor's DC resistance 20～30Ω ?

NO

Fan motor failure
Short circuit: DC resistance below 5Ω
Open circuit: DC resistance over 1kΩ

YES

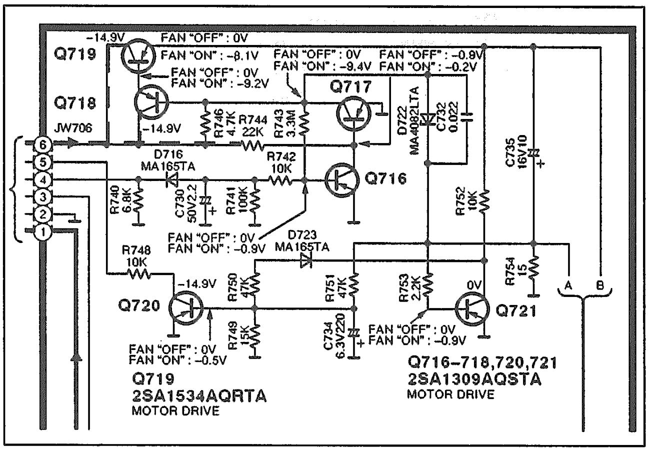
Reinstall the fan on the unit.

Are the terminal voltage of Q716～Q719 normal in both active and inactive states of the fan motor? (See table 1.)

NO

Check the integrity of Q716～Q719 and the fan motor driving circuit. (See Fig.1.)

Fig. 1


Q719
Q718
JW706
-14.9V
FAN "OFF" : 0V
FAN "ON" : -8.1V
FAN "OFF" : 0V
FAN "ON" : -9.2V
-14.9V
R746 4.7K
R744 22K
R743 3.3M
FAN "OFF" : 0V
FAN "ON" : -9.4V
Q717
FAN "OFF" : -0.9V
FAN "ON" : -0.2V
D722 MA4082LTA
C732 0.022
C735 16V10
⑥
⑤
④
③
②
①
D716 MA165TA
R742 10K
Q716
R740 6.8K
C730 50V2.2
R741 100K
R752 10K
FAN "OFF" : 0V
FAN "ON" : -0.9V
D723 MA165TA
R748 10K
-14.9V
Q720
R750 47K
R751 47K
R753 2.2K
0V
Q721
R754 15
A
B
R749 15K
C734 6.3V220
FAN "OFF" : 0V
FAN "ON" : -0.5V
FAN "OFF" : 0V
FAN "ON" : -0.9V
Q719
2SA1534AQRTA
MOTOR DRIVE
Q716-718,720,721
2SA1309AQSTA
MOTOR DRIVE

Ref No. \ Voltage		fan. off	fan. on
Q716	E	0V	0V
	C	−0.9V	−0.2V
	B	0V	−0.9V
Q717	E	0V	0V
	C	0V	−9.4V
	B	−0.9V	−0.2V
Q718	E	0V	−9.2V
	C	−14.9V	−14.9V
	B	0V	−9.4V
Q719	E	0V	−8.1V
	C	−14.9V	−14.9V
	B	0V	−9.2V

(Table 1)

YES

Is an audio signal present at pins ① and ④ of IC801 or pins ① and ④ of IC802 or pin ⑦ of IC803.

NO

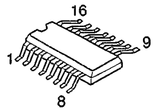
The power IC (IC801 or IC802 or IC803) is defective.

YES

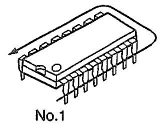
The fan motor, power ICs and fan driver are functioning normally.

■TERMINAL GUIDE OF IC's, TRANSISTORS AND DIODES

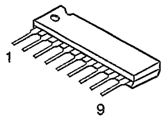
TC4053BF



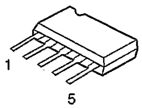
UPC4570C



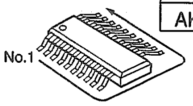
BA6218
BA6138



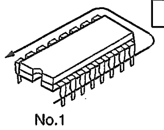
LA7213



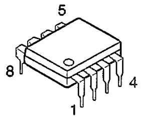
MB90082PF117	28PIN
BU2092F	18PIN
AK5340B-VS	28PIN
AK4320-VM	24PIN



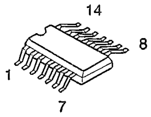
TC9162N	28PIN
TC9163N	28PIN
TC9164N	28PIN



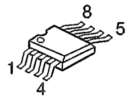
TC9184P



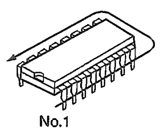
TC74H164AFL



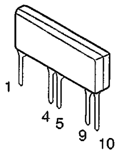
TC4W53FTE12L
TC7W02FTE12L



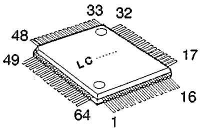
BA7625



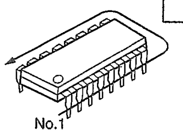
TSA3000J



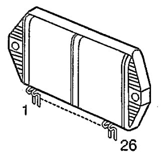
LC8A028B5A53


33
32
48
49
LC
17
16
64
1

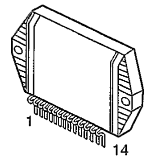
M5218AP	8PIN
LA1832A	24PIN
LC7218	24PIN



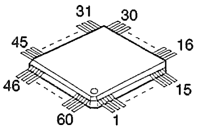
RSN33M5



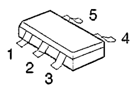
RSN36S5A



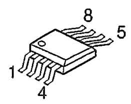
TC9332F-022


31
30
45
16
46
15
60
1

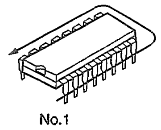
TC7S04FTE85L



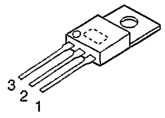
NJM2115MTE1
TC7W74FTE12L
TC7WU04FT12L



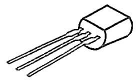
CS3310-KP



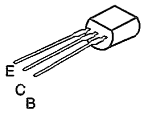
LM2940T5M



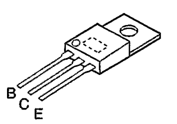
AN78L05TA
AN79L05TA



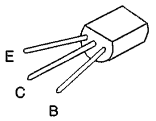
2SB621AQRSTA

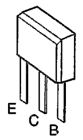


2SB1548PQAU
2SD2374PQAU

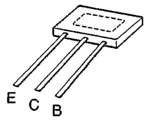


2SA1534AQRTA



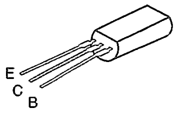


2SA1309AQSTA	UN411FTA
2SC2785FETA	UN4119TA
2SC2787LTA	UN4211AITA
2SC3311ARSTA	UN4213AITA
2SC3311AQSTA	UN4214AITA
2SD1915FTA	UN4111AITA
	UN4115TA

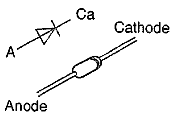


UN4113AITA
UN4219TA
UN4210TA
UN4216TA

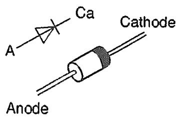
2SC3940AQSTA



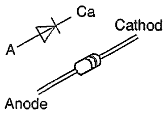
MA165TA
MA700ATA


Ca
Cathode
A
Anode

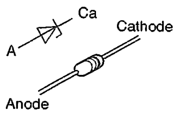
SB360L6508


Ca
Cathode
A
Anode

1SS291TA
MA167ATA
MA4220MTA

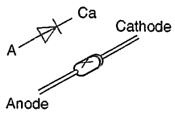

Ca
Cathode
A
Anode

MA4075MTA
MA4039MTA

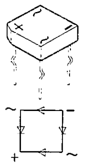

Ca
Cathode
A
Anode

MA4051MTA
MA4056MTA
MA4062LTA
MA4068MTA
MA4062MTA
MA4082LTA
MA4030MTA

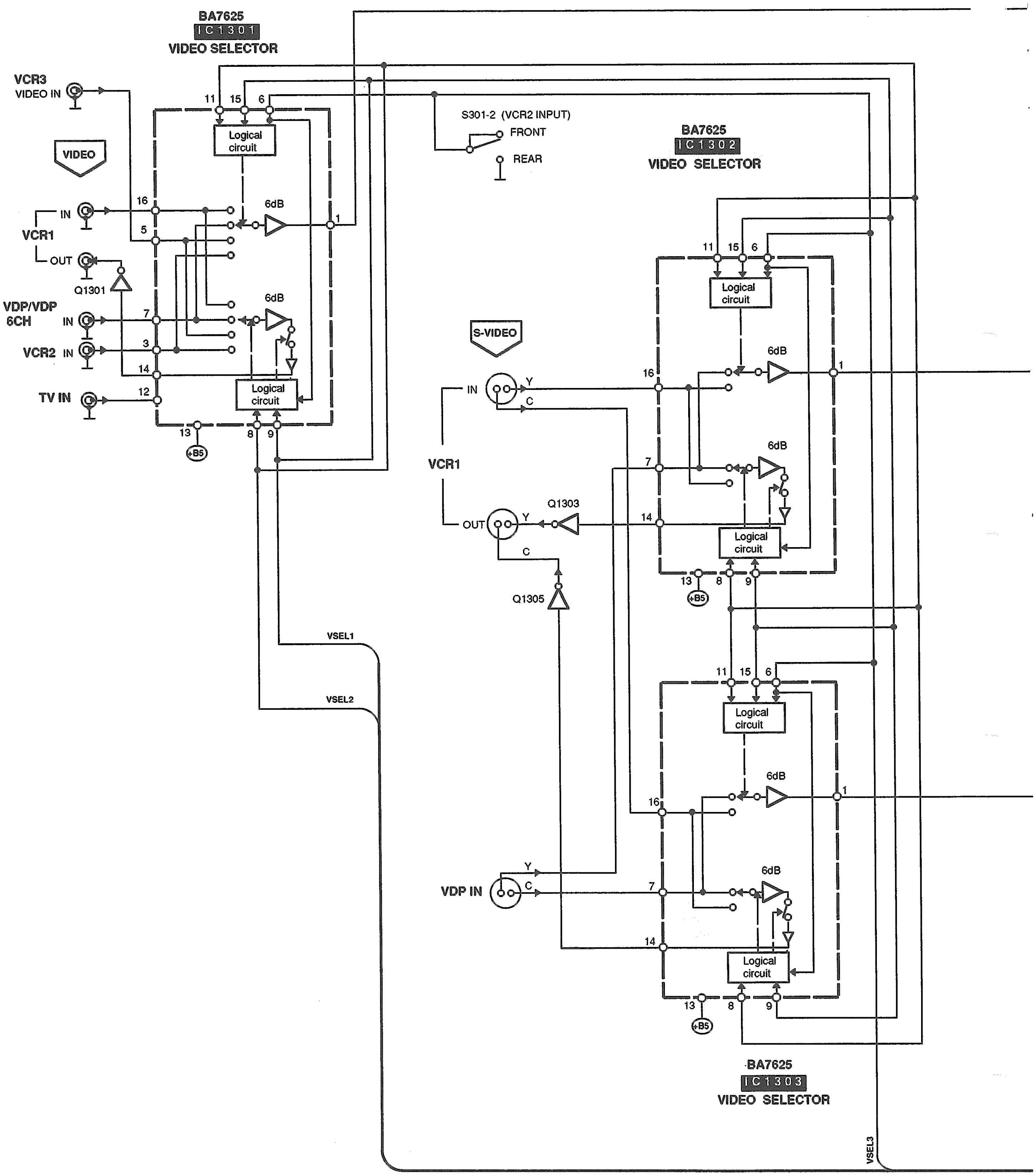
1SR35400TB

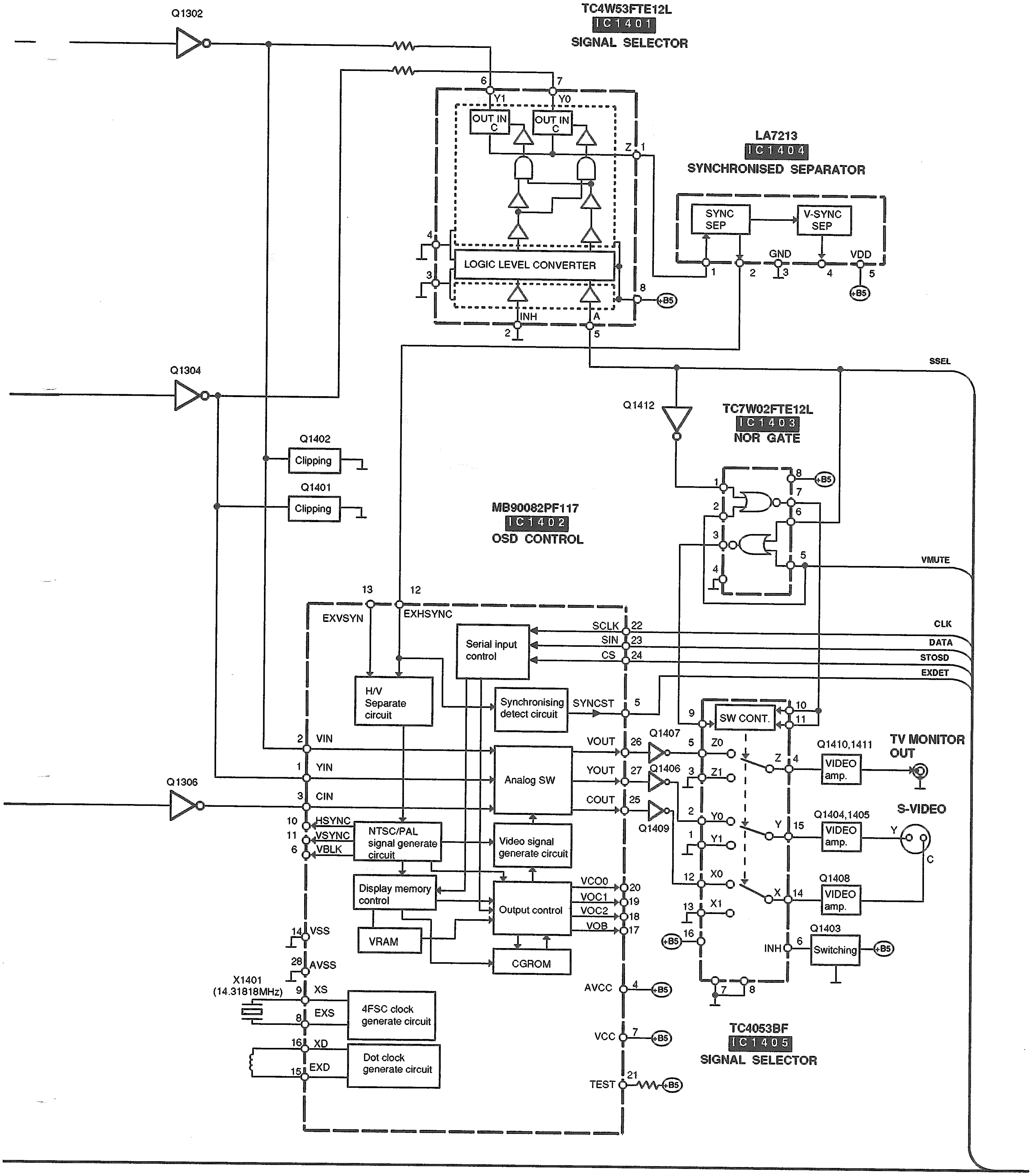

Ca
Cathode
A
Anode

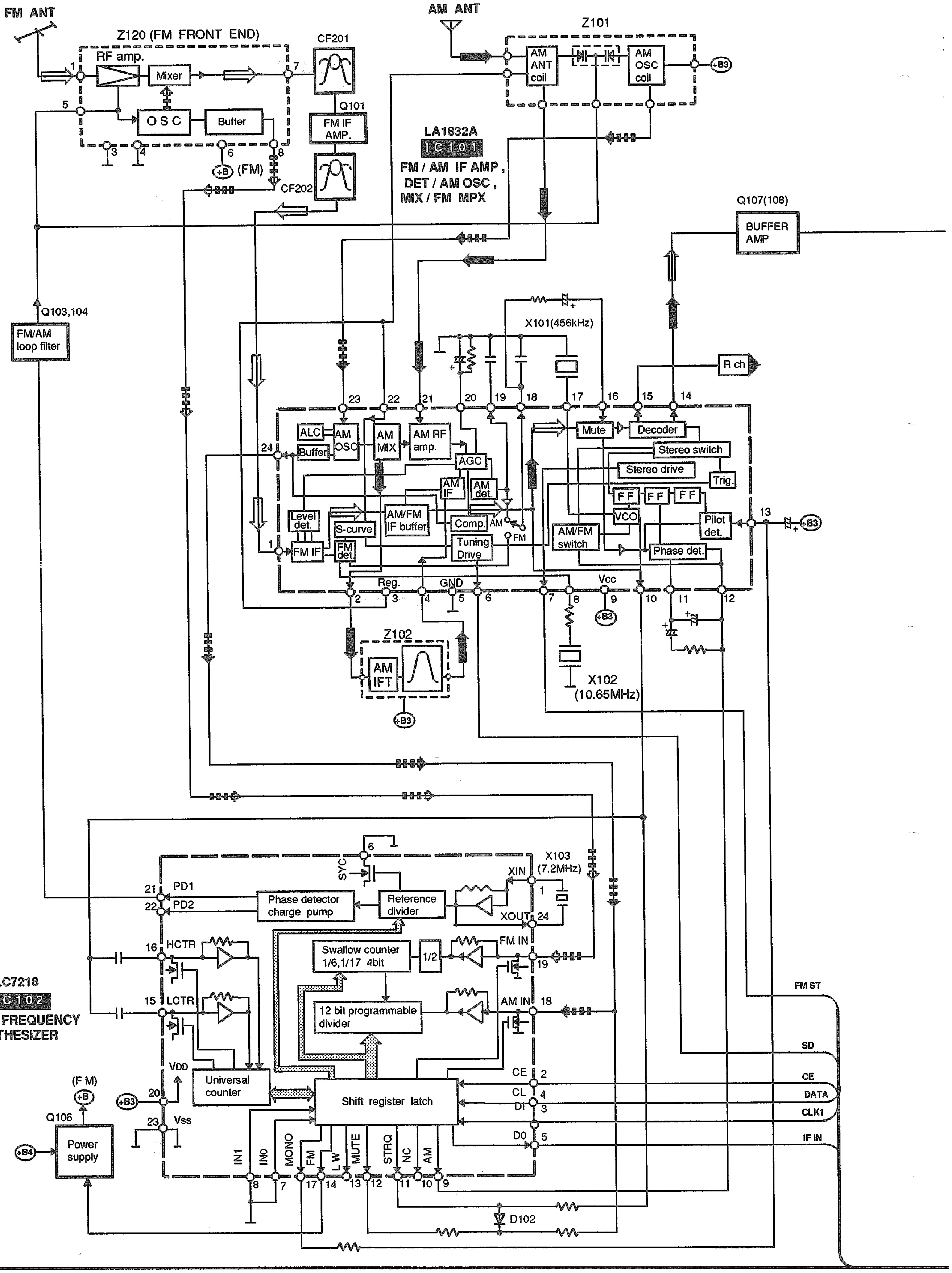
SVDS10VB20F



■BLOCK DIAGRAM

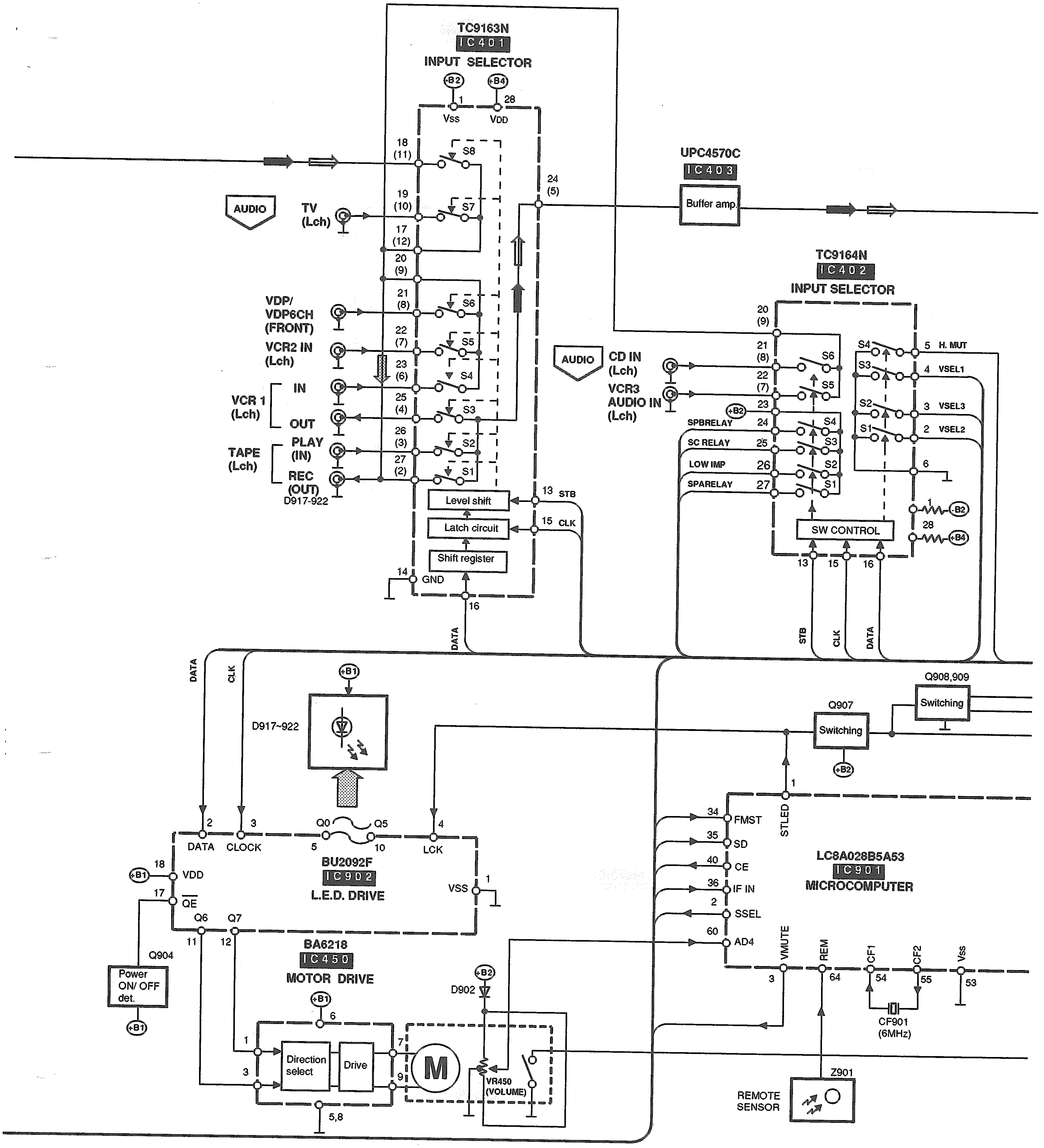

BA7625
IC1301
VIDEO SELECTOR
VCR3
VIDEO IN
VIDEO
IN
VCR1
OUT
Q1301
VDP/VDP
6CH
IN
VCR2
IN
TV IN
11
15
6
Logical circuit
16
5
6dB
1
6dB
7
3
14
12
Logical circuit
13
8
9
+B5
S301-2 (VCR2 INPUT)
FRONT
REAR
BA7625
IC1302
VIDEO SELECTOR
S-VIDEO
IN
Y
C
VCR1
OUT
Y
C
Q1303
Q1305
16
7
14
13
8
9
+B5
VSEL1
VSEL2
VDP IN
Y
C
16
7
14
13
8
9
+B5
BA7625
IC1303
VIDEO SELECTOR
VSEL3


Q1302
TC4W53FTE12L
IC1401
SIGNAL SELECTOR
Y1
Y0
OUT IN C
OUT IN C
Z
LOGIC LEVEL CONVERTER
INH
A
+B5
LA7213
IC1404
SYNCHRONISED SEPARATOR
SYNC SEP
V-SYNC SEP
GND
VDD
SSEL
Q1304
Q1412
TC7W02FTE12L
IC1403
NOR GATE
Q1402
Clipping
Q1401
Clipping
MB90082PF117
IC1402
OSD CONTROL
VMUTE
EXVSYN
EXHSYNC
SCLK
SIN
CS
CLK
DATA
STOSD
EXDET
Serial input control
H/V Separate circuit
Synchronising detect circuit
SYNCST
SW CONT.
VIN
YIN
CIN
Analog SW
VOUT
YOUT
COUT
Q1407
Q1406
Q1409
Q1306
Z0
Z1
Y0
Y1
X0
X1
Q1410,1411
VIDEO amp.
TV MONITOR OUT
Q1404,1405
S-VIDEO
Q1408
HSYNC
VSYNC
VBLK
NTSC/PAL signal generate circuit
Video signal generate circuit
Display memory control
Output control
VCO0
VOC1
VOC2
VOB
VRAM
CGROM
VSS
AVSS
X1401
(14.31818MHz)
XS
EXS
4FSC clock generate circuit
XD
EXD
Dot clock generate circuit
AVCC
VCC
TEST
Q1403
Switching
INH
TC4053BF
IC1405
SIGNAL SELECTOR

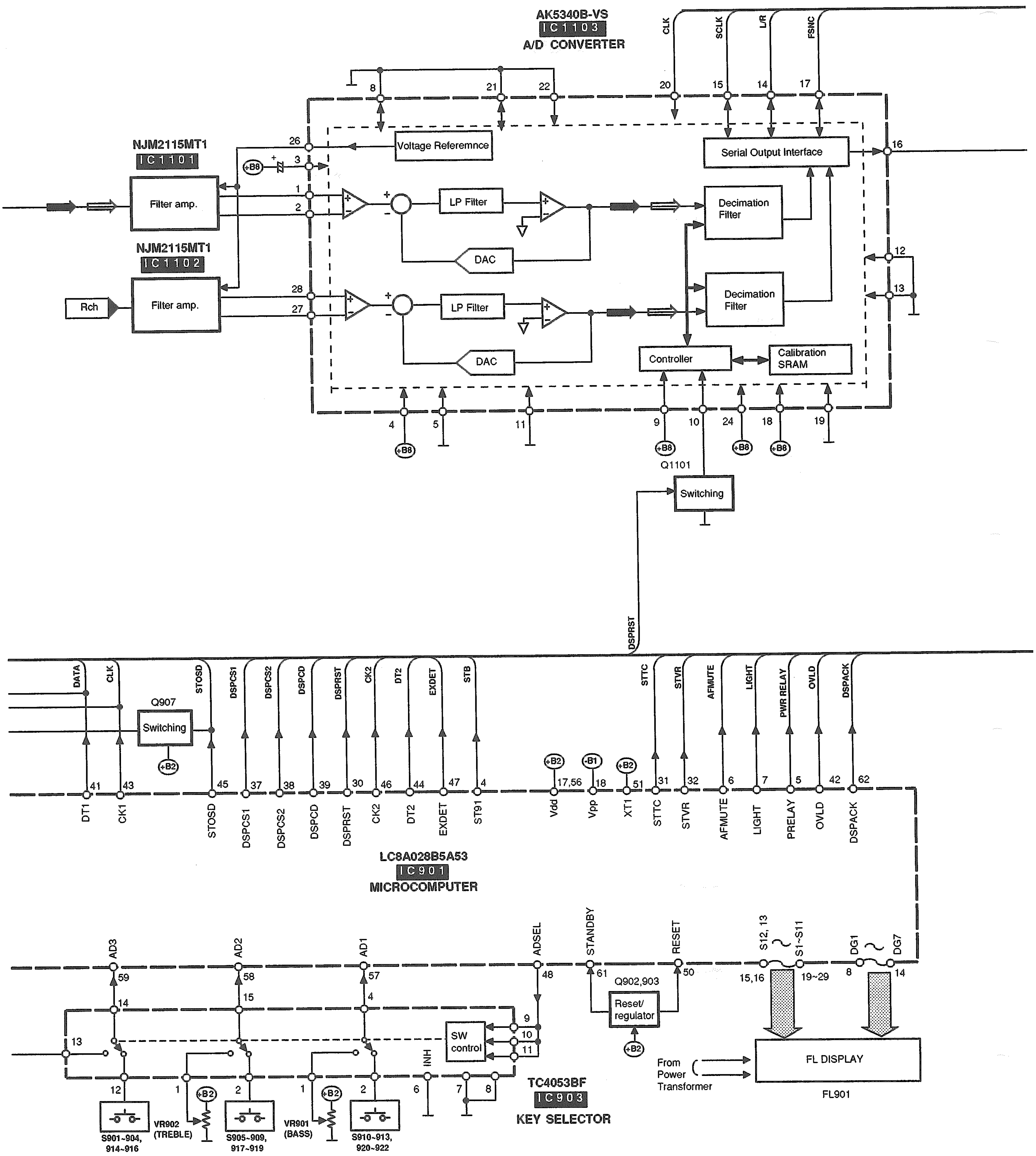

FM ANT
Z120 (FM FRONT END)
RF amp.
Mixer
OSC
Buffer
1
3
4
5
6
7
8
+B (FM)
CF201
Q101
FM IF AMP.
CF202
AM ANT
Z101
AM ANT coil
AM OSC coil
+B3
LA1832A
IC101
FM / AM IF AMP, DET / AM OSC, MIX / FM MPX
Q107(108)
BUFFER AMP
Q103,104
FM/AM loop filter
X101(456kHz)
R ch
ALC
Buffer
AM OSC
AM MIX
AM RF amp.
AGC
AM IF
AM det.
Level det.
S-curve
AM/FM IF buffer
Comp.
FM IF
FM det.
Tuning Drive
AM
FM
Mute
Decoder
Stereo switch
Stereo drive
Trig.
FF
FF
FF
VCO
AM/FM switch
Pilot det.
Phase det.
Reg.
GND
Vcc
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
Z102
AM IFT
X102 (10.65MHz)
X103 (7.2MHz)
SYC
XIN
XOUT
PD1
PD2
Phase detector charge pump
Reference divider
HCTR
LCTR
Swallow counter 1/6,1/17 4bit
1/2
FM IN
AM IN
12 bit programmable divider
LC7218
IC102
PLL FREQUENCY SYNTHESIZER
VDD
Vss
Universal counter
Shift register latch
CE
CL
DI
DO
IN1
IN0
MONO
FM
LW
MUTE
STRQ
NC
AM
(F M)
+B
+B3
+B4
Q106
Power supply
D102
FM ST
SD
CE
DATA
CLK1
IF IN

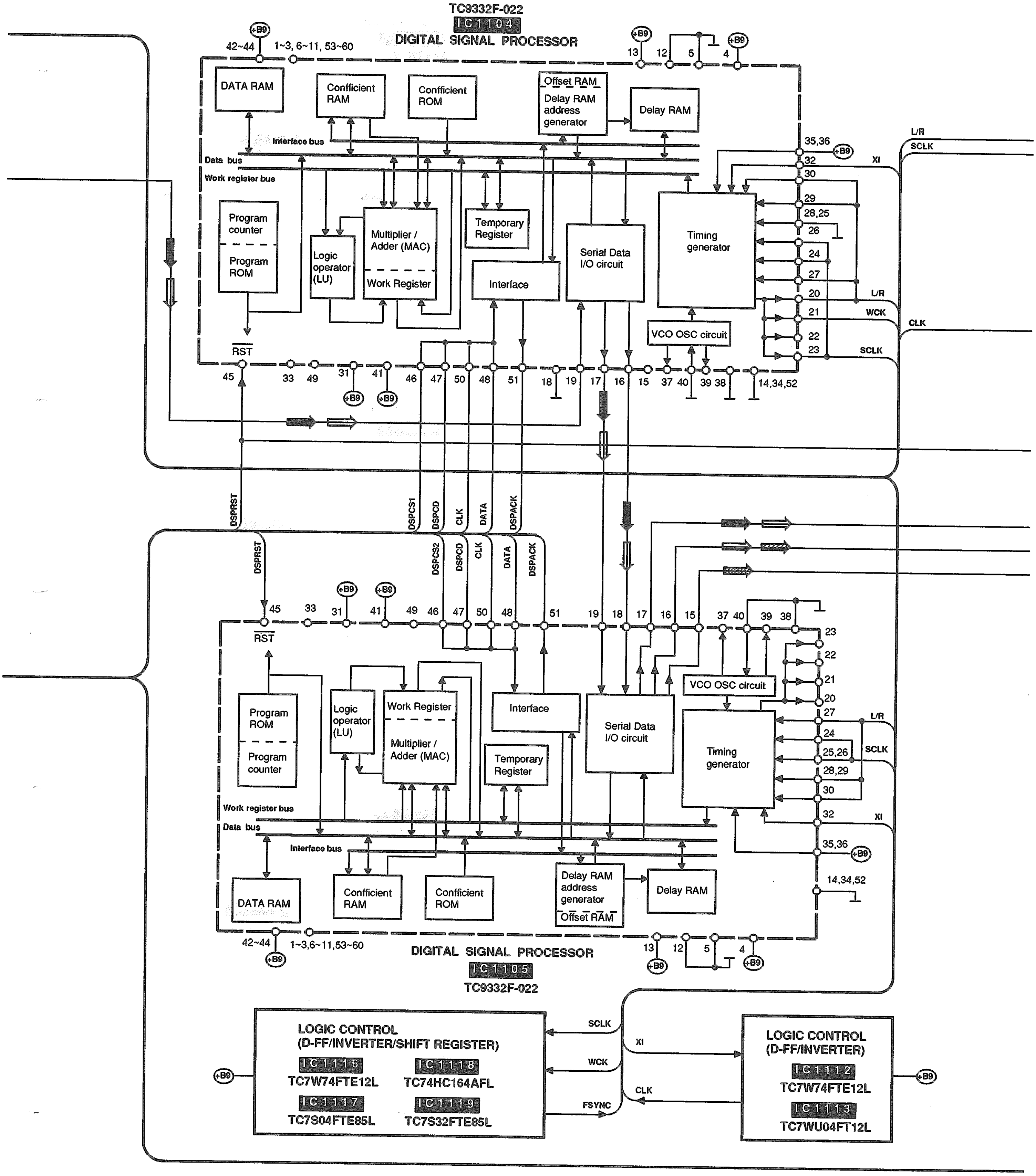
● Signal line ⇨ : FM signal ▮▮▮▷ : FM OSC signal ➡ : AM signal ▮▮▮▶ : AM OSC signal

▨ : Rec out signal ※ (   ) indicates pin No. of right channel.

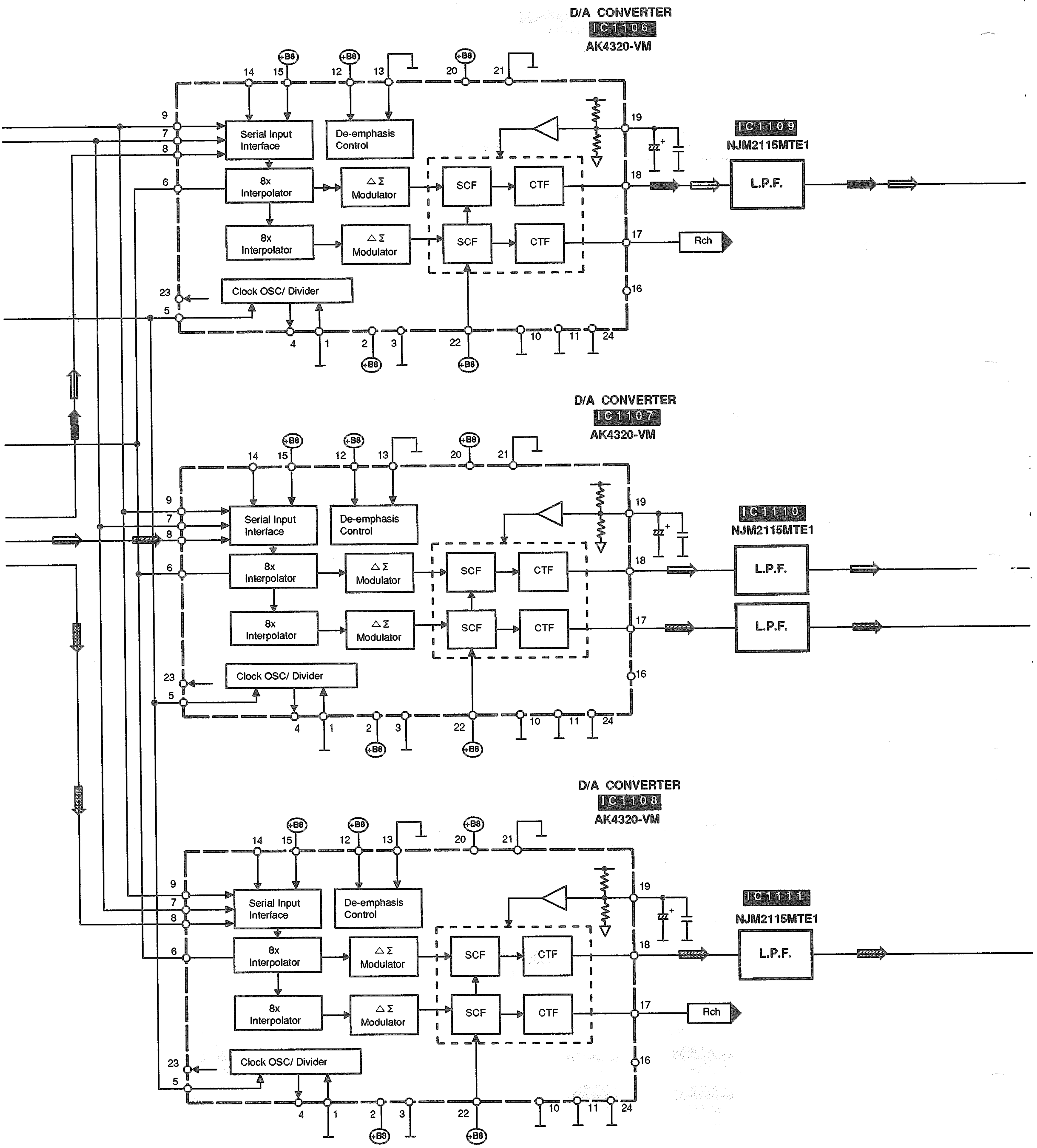

TC9163N
IC401
INPUT SELECTOR
+B2
+B4
Vss
VDD
S8
S7
S6
S5
S4
S3
S2
S1
AUDIO
TV (Lch)
VDP/ VDP6CH (FRONT)
VCR2 IN (Lch)
VCR 1 (Lch)
IN
OUT
TAPE (Lch)
PLAY (IN)
REC (OUT)
D917-922
Level shift
Latch circuit
Shift register
GND
13 STB
15 CLK
16
DATA
24 (5)
UPC4570C
IC403
Buffer amp.
TC9164N
IC402
INPUT SELECTOR
AUDIO
CD IN (Lch)
VCR3 AUDIO IN (Lch)
SPBRELAY
SC RELAY
LOW IMP
SPARELAY
H. MUT
VSEL1
VSEL3
VSEL2
SW CONTROL
STB
CLK
DATA
Q908,909
Switching
Q907
Switching
+B2
+B1
D917~922
Q0
Q5
DATA
CLOCK
LCK
BU2092F
IC902
L.E.D. DRIVE
VDD
QE
VSS
Q6
Q7
Q904
Power ON/ OFF det.
BA6218
IC450
MOTOR DRIVE
D902
Direction select
Drive
M
VR450 (VOLUME)
LC8A028B5A53
IC901
MICROCOMPUTER
STLED
FMST
SD
CE
IF IN
SSEL
AD4
VMUTE
REM
CF1
CF2
Vss
CF901 (6MHz)
Z901
REMOTE SENSOR

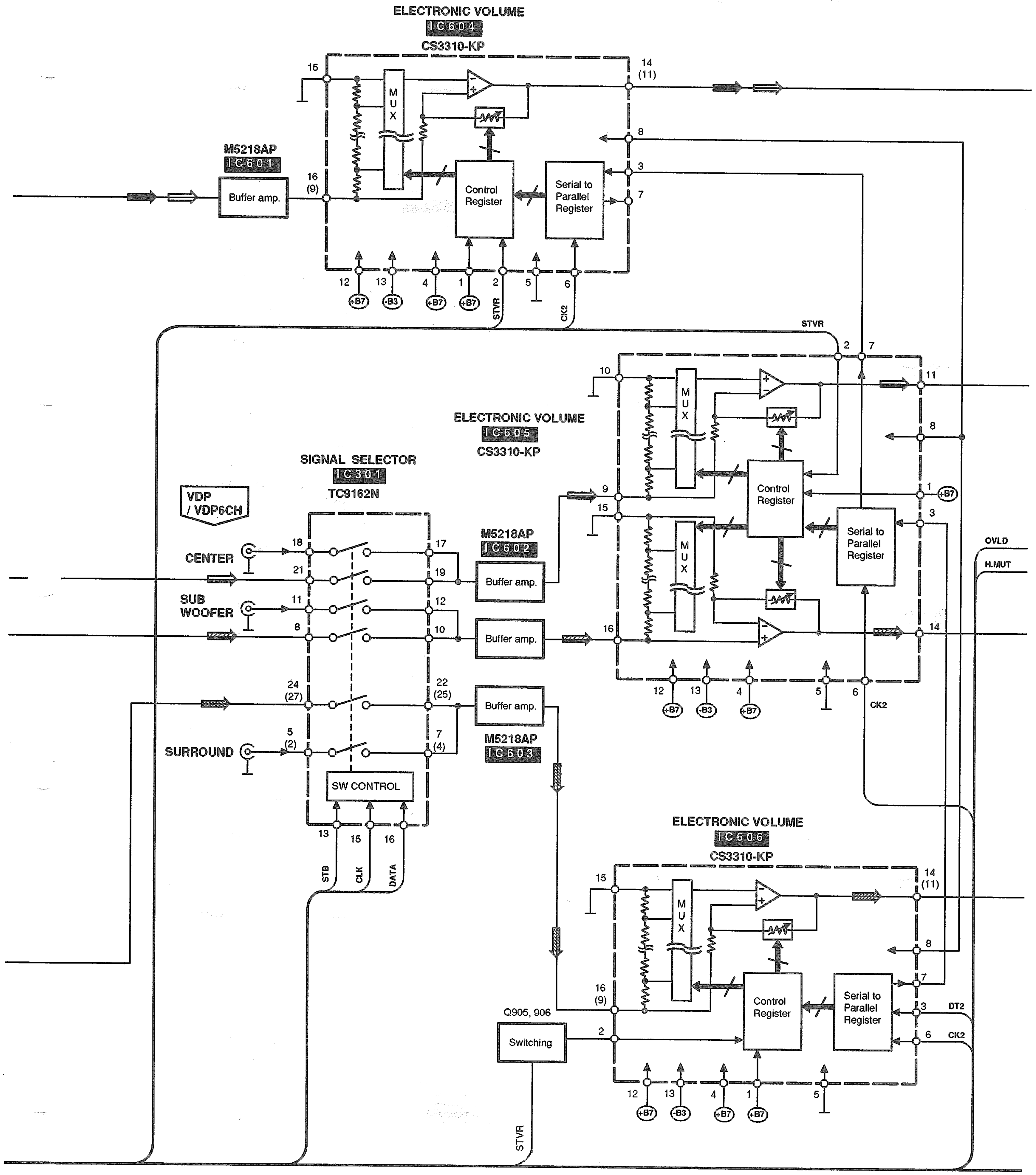
•Signal line ⇨ : FM signal ➡ : AM signal
▨ : Subwoofer signal ▨ : Surround speaker drive signal ➡ : Center speaker drive signal


AK5340B-VS
IC1103
A/D CONVERTER
CLK
SCLK
L/R
FSNC
8
21
22
20
15
14
17
16
NJM2115MT1
IC1101
26
3
1
2
+B8
Voltage Referemnce
Serial Output Interface
Filter amp.
LP Filter
Decimation Filter
DAC
NJM2115MT1
IC1102
Rch
Filter amp.
28
27
12
13
Controller
Calibration SRAM
4
5
11
9
10
24
18
19
Q1101
Switching
DSPRST
DATA
CLK
STOSD
DSPCS1
DSPCS2
DSPCD
DSPRST
CK2
DT2
EXDET
STB
STTC
STVR
AFMUTE
LIGHT
PWR RELAY
OVLD
DSPACK
Q907
Switching
+B2
+B1
41
43
45
37
38
39
30
46
44
47
4
17,56
18
51
31
32
6
7
5
42
62
DT1
CK1
STOSD
DSPCS1
DSPCS2
DSPCD
DSPRST
CK2
DT2
EXDET
ST91
Vdd
Vpp
XT1
STTC
STVR
AFMUTE
LIGHT
PRELAY
OVLD
DSPACK
LC8A028B5A53
IC901
MICROCOMPUTER
AD3
AD2
AD1
ADSEL
STANDBY
RESET
S12, 13
S1~S11
DG1
DG7
59
58
57
48
61
50
15,16
19~29
8
14
Q902,903
Reset/ regulator
14
15
4
13
9
10
11
SW control
INH
12
1
2
1
2
6
7
8
TC4053BF
IC903
KEY SELECTOR
From Power Transformer
FL DISPLAY
FL901
VR902 (TREBLE)
VR901 (BASS)
S901~904, 914~916
S905~909, 917~919
S910~913, 920~922

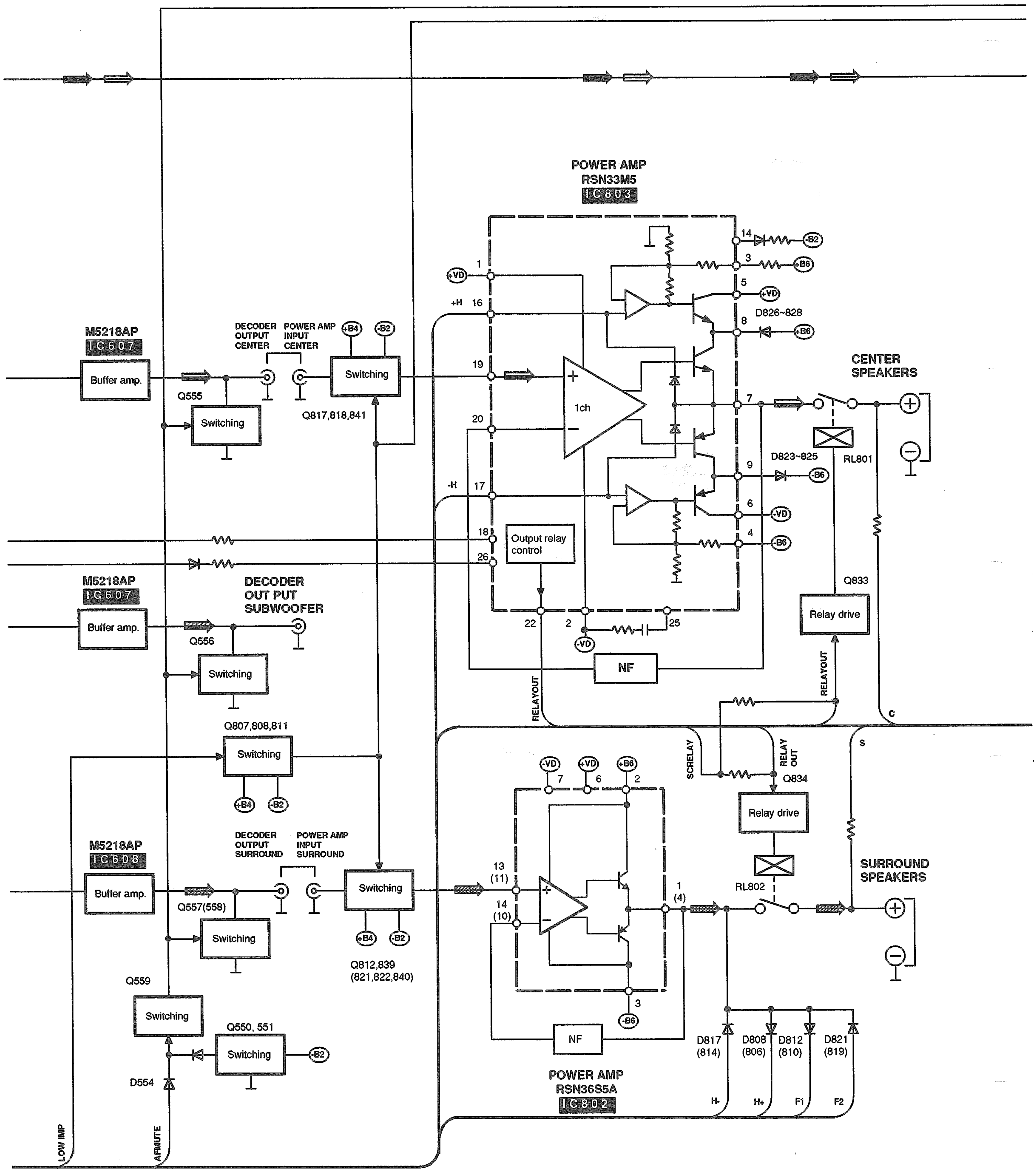

TC9332F-022
IC1104
DIGITAL SIGNAL PROCESSOR
DATA RAM
Conficient RAM
Conficient ROM
Offset RAM
Delay RAM address generator
Delay RAM
Interface bus
Data bus
Work register bus
Program counter
Program ROM
Logic operator (LU)
Multiplier / Adder (MAC)
Work Register
Temporary Register
Interface
Serial Data I/O circuit
Timing generator
VCO OSC circuit
RST
+B9
42~44
1~3, 6~11, 53~60
13 12 5 4
35,36 32 30 29 28,25 26 24 27 20 21 22 23
45 33 49 31 41 46 47 50 48 51 18 19 17 16 15 37 40 39 38 14,34,52
L/R
SCLK
XI
WCK
CLK
DSPRST
DSPCS1
DSPCD
CLK
DATA
DSPACK
DSPCS2
DSPCD
CLK
DATA
DSPACK
45 33 31 41 49 46 47 50 48 51 19 18 17 16 15 37 40 39 38
23 22 21 20 27 24 25,26 28,29 30 32 35,36 14,34,52
RST
Program ROM
Program counter
Logic operator (LU)
Work Register
Multiplier / Adder (MAC)
Interface
Temporary Register
Serial Data I/O circuit
VCO OSC circuit
Timing generator
Work register bus
Data bus
Interface bus
DATA RAM
Conficient RAM
Conficient ROM
Delay RAM address generator
Offset RAM
Delay RAM
42~44
1~3,6~11,53~60
13 12 5 4
DIGITAL SIGNAL PROCESSOR
IC1105
TC9332F-022
LOGIC CONTROL
(D-FF/INVERTER/SHIFT REGISTER)
IC1116
TC7W74FTE12L
IC1118
TC74HC164AFL
IC1117
TC7S04FTE85L
IC1119
TC7S32FTE85L
SCLK
WCK
FSYNC
XI
CLK
LOGIC CONTROL
(D-FF/INVERTER)
IC1112
TC7W74FTE12L
IC1113
TC7WU04FT12L
+B9

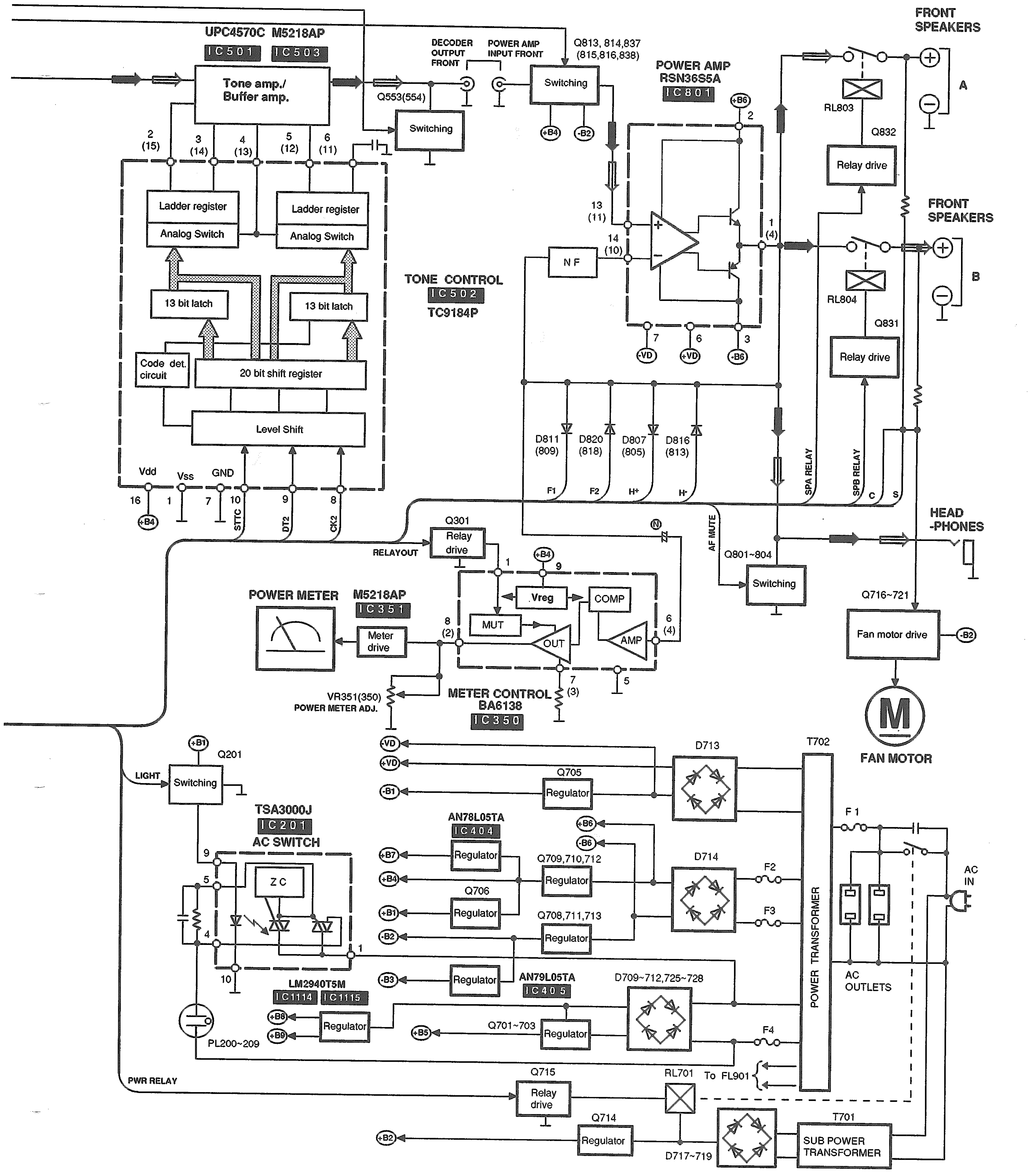
- Signal line ⇨ : FM signal ➡ : AM signal
  ▨⇨ : Subwoofer signal ▨⇨ : Surround speaker drive signal ⇨ : Center speaker drive signal


D/A CONVERTER
IC1106
AK4320-VM
+B8
14
15
12
13
20
21
9
7
8
6
23
5
4
1
2
3
22
10
11
24
19
18
17
16
Serial Input Interface
De-emphasis Control
8x Interpolator
ΔΣ Modulator
SCF
CTF
Clock OSC/ Divider
IC1109
NJM2115MTE1
L.P.F.
Rch
D/A CONVERTER
IC1107
AK4320-VM
IC1110
NJM2115MTE1
L.P.F.
L.P.F.
D/A CONVERTER
IC1108
AK4320-VM
IC1111
NJM2115MTE1
L.P.F.
Rch

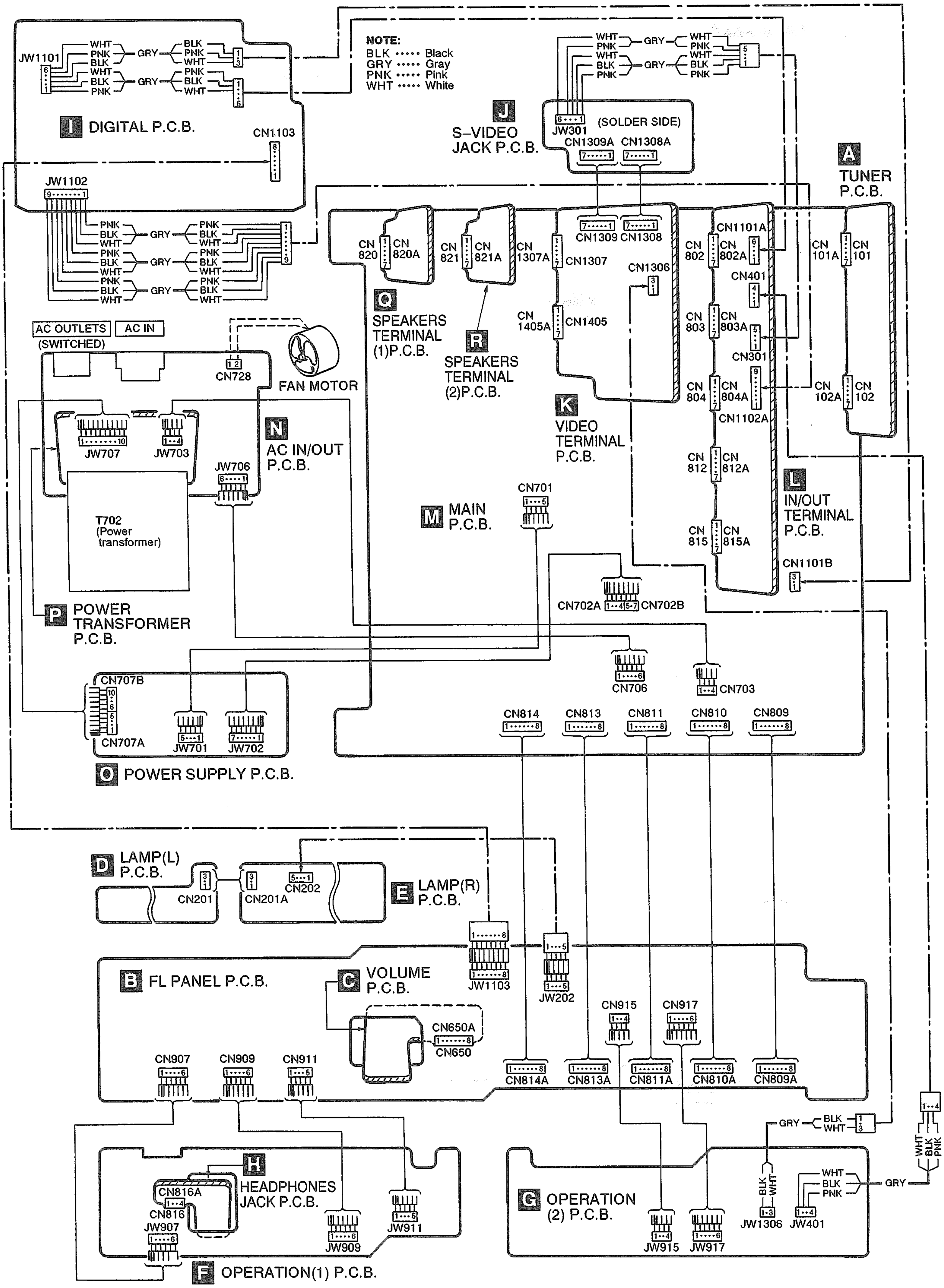

ELECTRONIC VOLUME
IC604
CS3310-KP
M5218AP
IC601
Buffer amp.
MUX
Control Register
Serial to Parallel Register
STVR
CK2
+B7
-B3
ELECTRONIC VOLUME
IC605
CS3310-KP
SIGNAL SELECTOR
IC301
TC9162N
VDP / VDP6CH
CENTER
SUB WOOFER
SURROUND
M5218AP
IC602
M5218AP
IC603
SW CONTROL
STB
CLK
DATA
OVLD
H.MUT
ELECTRONIC VOLUME
IC606
CS3310-KP
Q905, 906
Switching
DT2
CK2

• **Signal line** ⇨ : FM signal ➡ : AM signal
▨ : Subwoofer signal ▨ : Surround speaker drive signal ⇨ : Center speaker drive signal


POWER AMP
RSN33M5
IC803
M5218AP
IC607
Buffer amp.
Q555
Switching
DECODER OUTPUT CENTER
POWER AMP INPUT CENTER
+B4
-B2
Switching
Q817,818,841
+VD
+H
1
16
19
20
17
-H
18
26
1ch
Output relay control
22
2
25
-VD
NF
14
3
5
8
7
9
6
4
-B2
+B6
+VD
D826~828
+B6
D823~825
-B6
-VD
-B6
CENTER SPEAKERS
RL801
Q833
Relay drive
RELAYOUT
M5218AP
IC607
Buffer amp.
Q556
Switching
DECODER OUT PUT SUBWOOFER
Q807,808,811
Switching
+B4
-B2
M5218AP
IC608
Buffer amp.
DECODER OUTPUT SURROUND
POWER AMP INPUT SURROUND
Q557(558)
Switching
Switching
+B4
-B2
Q812,839
(821,822,840)
Q559
Switching
Q550, 551
Switching
-B2
D554
LOW IMP
AFMUTE
RELAYOUT
SCRELAY
RELAY OUT
C
S
-VD
+VD
+B6
7
6
2
13
(11)
14
(10)
1
(4)
3
-B6
NF
POWER AMP
RSN36S5A
IC802
Q834
Relay drive
RL802
SURROUND SPEAKERS
D817
(814)
D808
(806)
D812
(810)
D821
(819)
H-
H+
F1
F2


UPC4570C M5218AP
IC501 IC503
Tone amp./ Buffer amp.
2 (15) 3 (14) 4 (13) 5 (12) 6 (11)
Ladder register
Analog Switch
13 bit latch
Code det. circuit
20 bit shift register
Level Shift
Vdd Vss GND
16 1 7 10 9 8
+B4
STTC DT2 CK2
TONE CONTROL
IC502
TC9184P
DECODER OUTPUT FRONT
POWER AMP INPUT FRONT
Q553(554)
Switching
Q813, 814,837 (815,816,838)
+B4 -B2
POWER AMP
RSN36S5A
IC801
+B6
13 (11)
14 (10)
NF
1 (4)
7 6 3
-VD +VD -B6
D811 (809) D820 (818) D807 (805) D816 (813)
F1 F2 H+ H-
SPA RELAY SPB RELAY C S
FRONT SPEAKERS
A B
RL803 Q832 Relay drive
RL804 Q831 Relay drive
HEAD -PHONES
AF MUTE
Q801~804
Switching
Q716~721
Fan motor drive
-B2
M
FAN MOTOR
Q301
Relay drive
RELAYOUT
POWER METER
M5218AP
IC351
Meter drive
+B4
1 9
Vreg COMP MUT OUT AMP
8 (2) 6 (4) 7 (3) 5
VR351(350)
POWER METER ADJ.
METER CONTROL
BA6138
IC350
LIGHT
+B1
Q201
Switching
TSA3000J
IC201
AC SWITCH
9 5 4 10 1
Z C
PL200~209
PWR RELAY
-VD +VD -B1
Q705 Regulator
D713
T702
POWER TRANSFORMER
AN78L05TA
IC404
+B6 -B6
-B7 +B4 +B1 -B2
Q709,710,712 Regulator
Q706 Regulator
Q708,711,713 Regulator
D714
F1 F2 F3 F4
AC IN
AC OUTLETS
-B3 Regulator
AN79L05TA
IC405
D709~712,725~728
LM2940T5M
IC1114 IC1115
+B8 +B9 Regulator
Q701~703
+B5 Regulator
To FL901
Q715 Relay drive
RL701
Q714 Regulator
+B2
D717~719
T701
SUB POWER TRANSFORMER

■WIRING CONNECTION DIAGRAM



NOTE:
BLK ····· Black
GRY ····· Gray
PNK ····· Pink
WHT ····· White

I DIGITAL P.C.B.
JW1101
CN1103
JW1102
J S–VIDEO JACK P.C.B.
JW301
(SOLDER SIDE)
CN1309A
CN1308A
A TUNER P.C.B.
CN101A
CN101
CN102A
CN102
Q SPEAKERS TERMINAL (1)P.C.B.
CN820
CN820A
R SPEAKERS TERMINAL (2)P.C.B.
CN821
CN821A
CN1307A
CN1307
CN1309
CN1308
CN1306
CN1405A
CN1405
K VIDEO TERMINAL P.C.B.
CN1101A
CN802
CN802A
CN401
CN803
CN803A
CN301
CN804
CN804A
CN1102A
CN812
CN812A
CN815
CN815A
CN1101B
L IN/OUT TERMINAL P.C.B.
AC OUTLETS (SWITCHED)
AC IN
CN728
FAN MOTOR
JW707
JW703
JW706
N AC IN/OUT P.C.B.
T702 (Power transformer)
P POWER TRANSFORMER P.C.B.
CN701
M MAIN P.C.B.
CN702A
CN702B
CN706
CN703
CN707B
CN707A
JW701
JW702
O POWER SUPPLY P.C.B.
CN814
CN813
CN811
CN810
CN809
D LAMP(L) P.C.B.
CN201
CN201A
CN202
E LAMP(R) P.C.B.
JW1103
JW202
B FL PANEL P.C.B.
C VOLUME P.C.B.
CN650A
CN650
CN915
CN917
CN907
CN909
CN911
CN814A
CN813A
CN811A
CN810A
CN809A
H HEADPHONES JACK P.C.B.
CN816A
CN816
JW907
JW909
JW911
F OPERATION(1) P.C.B.
G OPERATION (2) P.C.B.
JW915
JW917
JW1306
JW401
WHT
PNK
BLK
GRY

■SCHEMATIC DIAGRAM (Parts list on pages 72~80.)

- This schematic diagram may be modified at any time with the development of new technology.

Note 1:

- **S901**: Playback mode select (SFC) Switch.
- **S902**: Playback mode select (THX CINEMA) Switch.
- **S903**: Center mode select (— CENTER MODE) Switch.
- **S904**: Power "STANDBY ⏻ / ON" (POWER, STANDBY ⏻ /ON) Switch.
- **S905**: Subwoofer OFF/ ON (— SUBWOOFER OFF/ ON) Switch.
- **S906**: Help/ reset (— HELP— RESET) Switch.
- **S907**: Playback mode select (STEREO) Switch.
- **S908**: Speaker select (SPEAKERS A) Switch.
- **S909**: Playback mode select (SURROUND) Switch.
- **S910**: Playback mode select (MONO) Switch.
- **S911**: Speaker select (SPEAKERS B) Switch.
- **S912**: Playback mode select (3 STEREO) Switch.
- **S913**: Delay time adjust (— DELAY TIME) Switch.
- **S914**: Band select (BAND) Switch.
- **S915**: Tuning control (TUNING ∧) Switch.
- **S916**: Input select (INPUT SELECTOR <) Switch.
- **S917**: FM mode select (FM AUTO / MONO) Switch.
- **S918**: Preset channel select (PRESET ∨) Switch.
- **S919**: Input select (INPUT SELECTOR >) Switch.
- **S920**: Memory (MEMORY) Switch.
- **S921**: Preset channel select (PRESET ∧) Switch.
- **S922**: Tuning control (TUNING ∨) Switch.
- Signal line
- ▫▫▫▫▷ : FM OSC signal
  - ▪▪▪▪▶ : AM OSC signal
  - ▒▒⇨ : Rec out signal (Lch)
  - ▨▨⇨ : Surround speaker drive signal (Lch)
  - ▬▬ : Positive voltage lines
  - ▬ ▬ ▬ : Negative voltage lines
  - ⇨ : FM signal
  - ➡ : AM signal
  - ⇨ : Center speaker drive signal
  - ⇨ : Subwoofer speaker drive signal

- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-nose (resistors), etc. are used as occation calls. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
- The supply part number is described alone in the replacement parts.
- All voltage values shown in circuitry are DC voltage in FM signal (Stereo signal) reception mode.

＊Figures in (   ) Stand for DC-voltage in AM signal reception mode.

Note 2:

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE 2.5A, 8A AND 10A 125V FUSES.

⚠

RISK OF FIRE-REPLACE FUSE AS MARKED.

FUSE CAUTION

■⊟ This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

■⊟ Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de mêne type. Ce dernier est indiqué là qù le présent symbole est apposé.

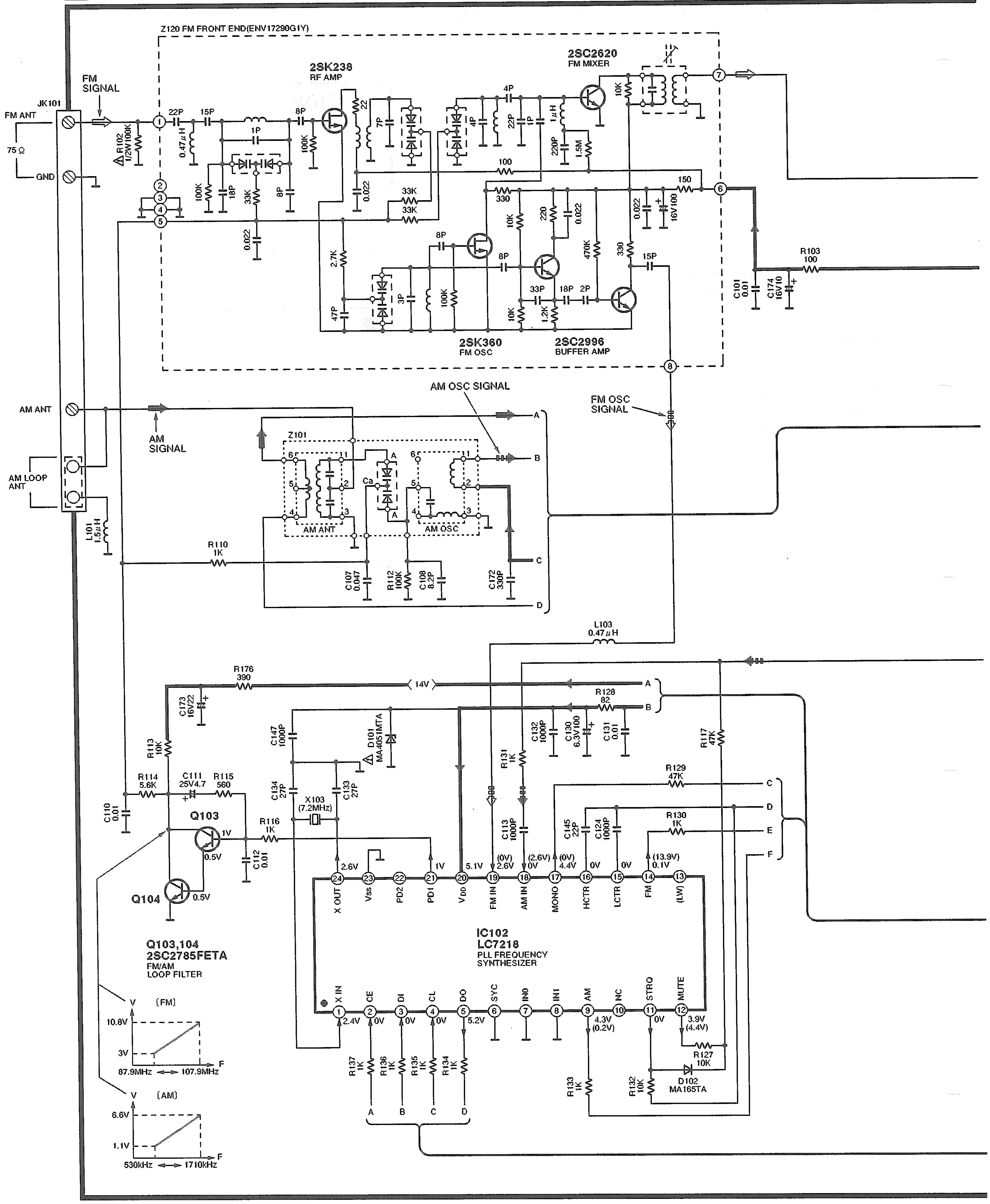
- **Caution!**

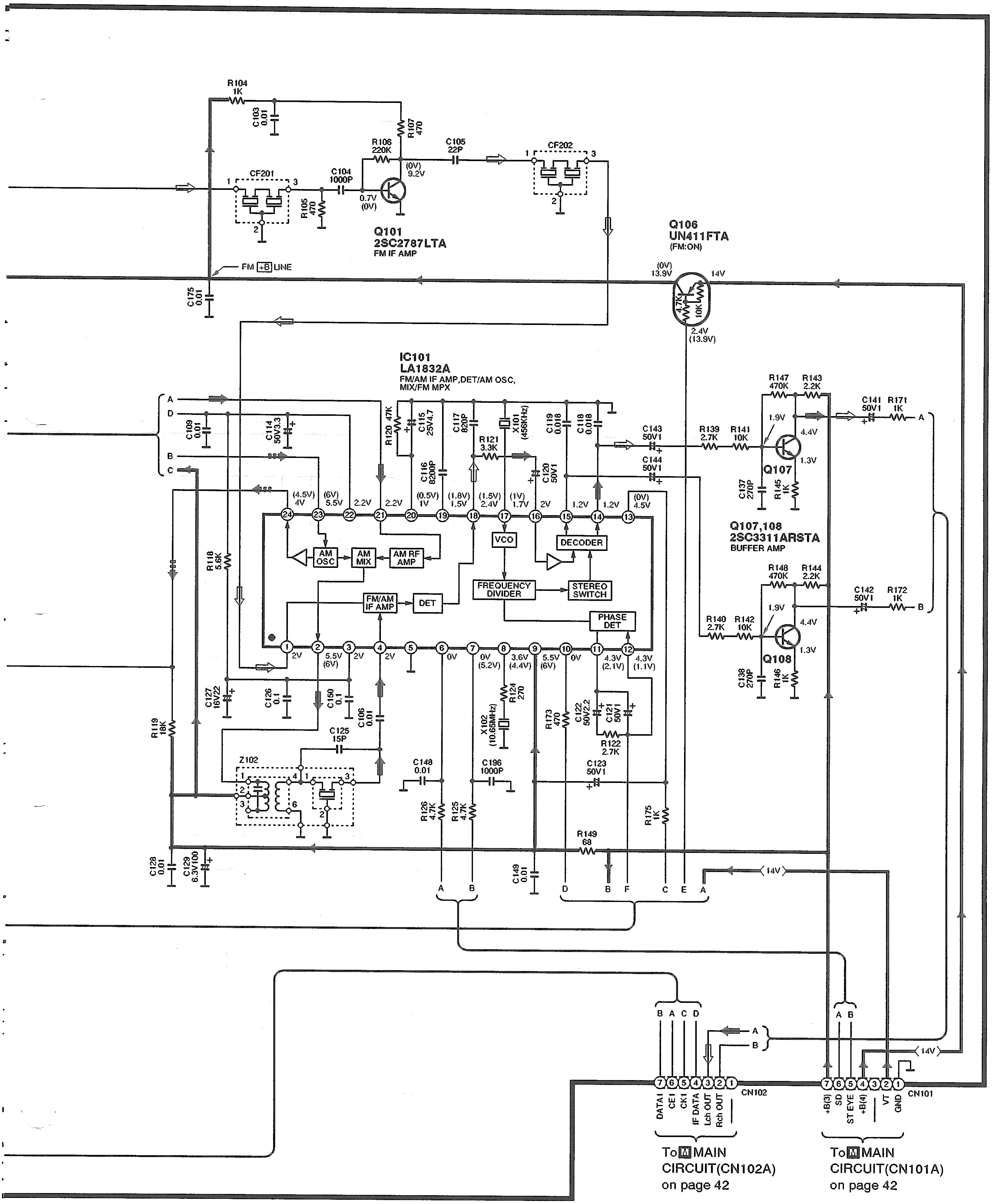
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

A TUNER CIRCUIT (P.C. Board: on page 58)

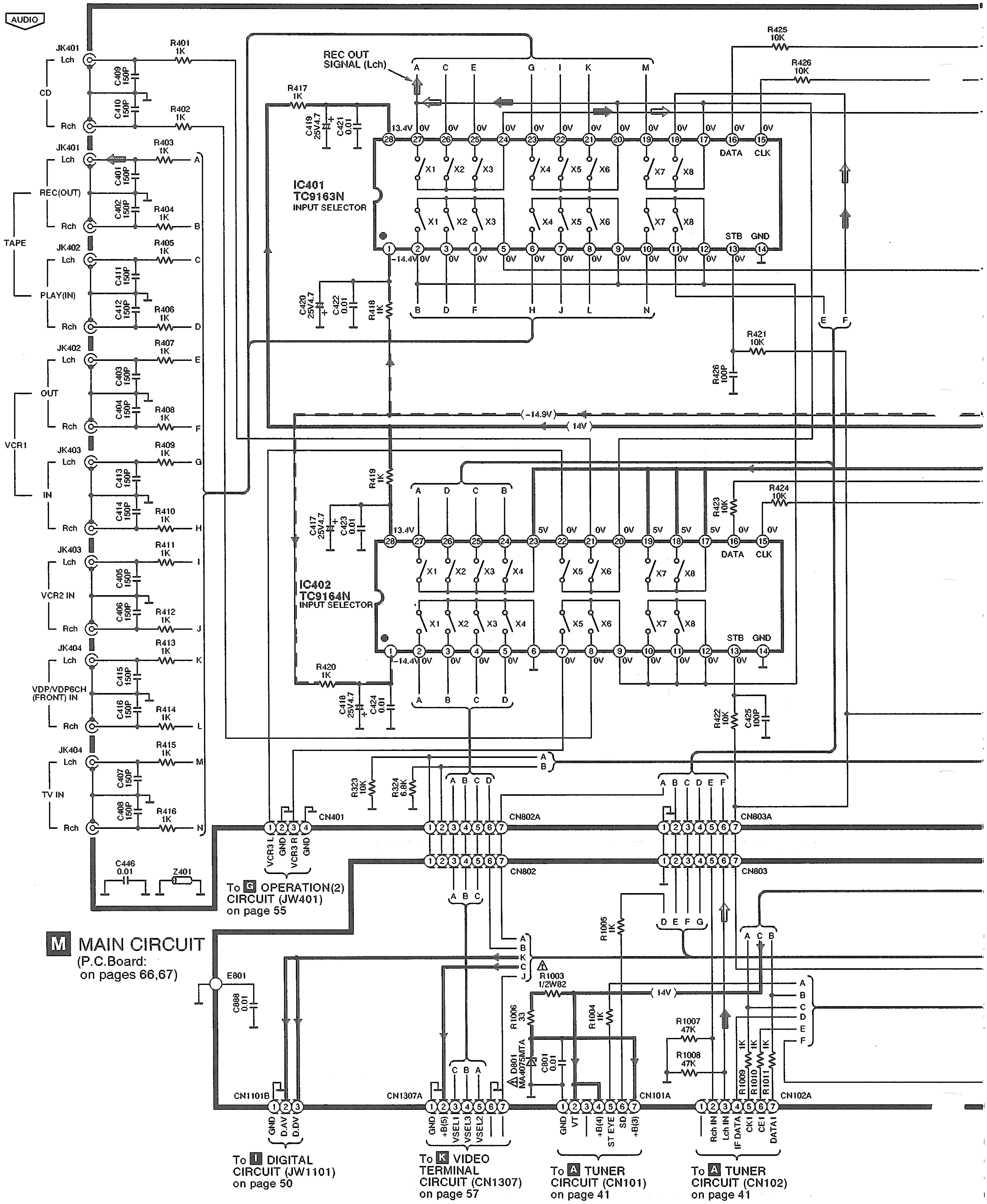
- ● ▯▯▯▯▷ : FM OSC signal
- ● ▮▮▮▮▶ : AM OSC signal
- ● ⇨ : FM signal
- ● ➡ : AM signal

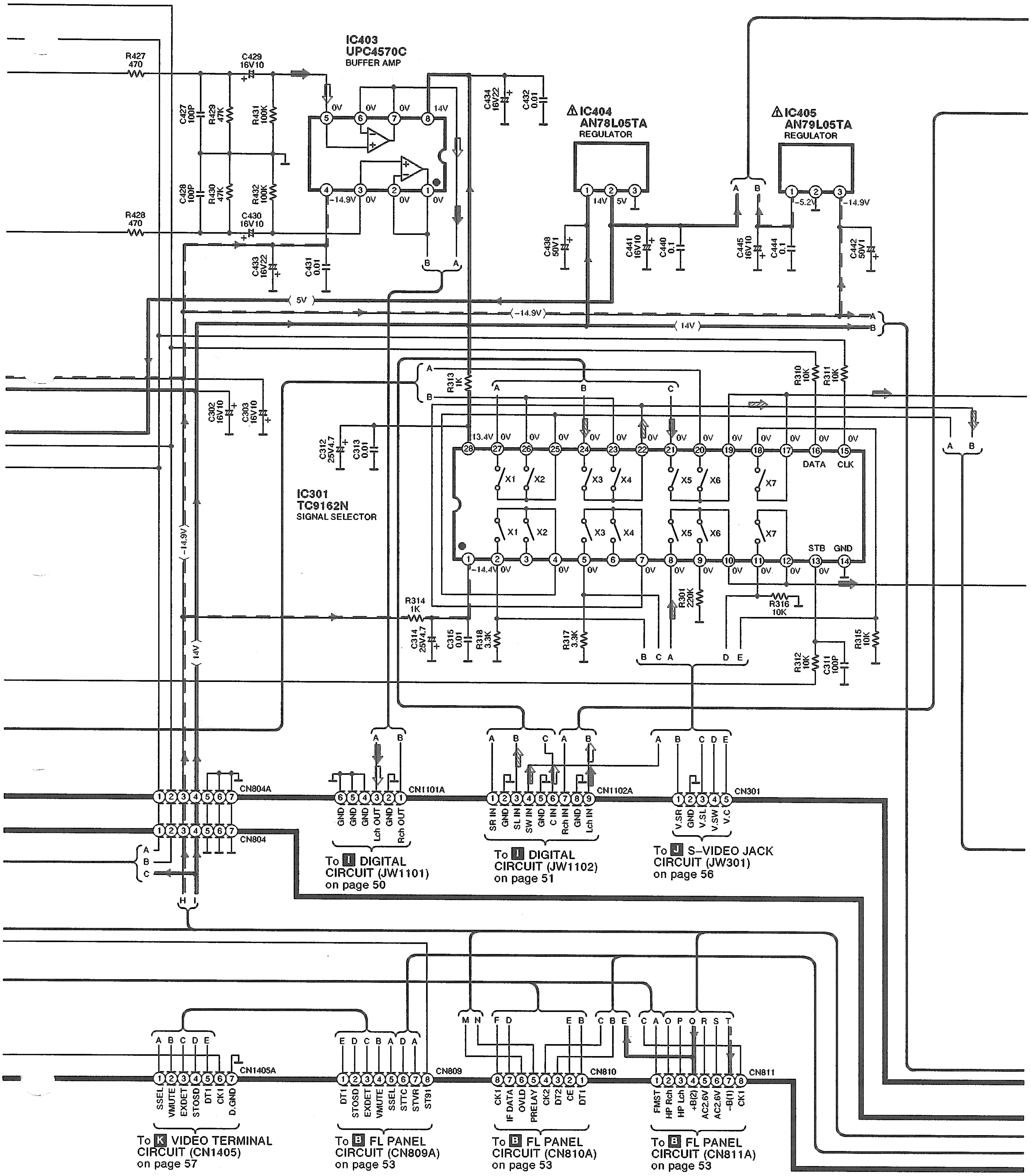

Z120 FM FRONT END(ENV17290G1Y)
JK101
FM ANT
75 Ω
GND
FM SIGNAL
R102 1/2W100K
22P
15P
0.47μH
1P
100K
18P
33K
8P
0.022
2SK238
RF AMP
22
7P
2SC2620
FM MIXER
4P
1μH
220P
1.5M
10K
100
150
330
33K
33K
220
0.022
10K
470K
330
16V100
2.7K
8P
3P
47P
100K
2SK360
FM OSC
2SC2996
BUFFER AMP
33P
18P
2P
15P
1.2K
C101 0.01
C174 16V10
R103 100
AM ANT
AM LOOP ANT
AM SIGNAL
AM OSC SIGNAL
FM OSC SIGNAL
Z101
AM ANT
AM OSC
Ca
L101 1.5μH
R110 1K
C107 0.047
R112 100K
C108 8.2P
C172 330P
A
B
C
D
L103 0.47μH
R176 390
14V
C173 16V22
R128 82
C147 1000P
D101 MA4051MTA
C132 1000P
C130 6.3V100
C131 0.01
R117 47K
R113 10K
R131 1K
R114 5.6K
C111 25V4.7
R115 560
C134 27P
C133 27P
X103 (7.2MHz)
R129 47K
C110 0.01
Q103
R116 1K
1V
0.5V
C112 0.01
C113 1000P
C145 22P
C124 1000P
R130 1K
E
F
Q104
0.5V
2.6V
1V
5.1V
(0V) 2.6V
(2.6V) 0V
(0V) 4.4V
0V
0V
(13.9V) 0.1V
X OUT
Vss
PD2
PD1
VDD
FM IN
AM IN
MONO
HCTR
LCTR
FM
(LW)
IC102
LC7218
PLL FREQUENCY SYNTHESIZER
X IN
CE
DI
CL
DO
SYC
IN0
IN1
AM
NC
STRQ
MUTE
2.4V
0V
0V
0V
5.2V
4.3V (0.2V)
0V
3.9V (4.4V)
R127 10K
D102 MA165TA
R137 1K
R136 1K
R135 1K
R134 1K
R133 1K
R132 10K
Q103,104
2SC2785FETA
FM/AM LOOP FILTER
V (FM)
10.8V
3V
87.9MHz ⟷ 107.9MHz
F
V (AM)
6.6V
1.1V
530kHz ⟷ 1710kHz
F


R104
1K
C103
0.01
R107
470
R106
220K
C105
22P
CF202
(0V)
9.2V
CF201
C104
1000P
R105
470
0.7V
(0V)
Q101
2SC2787LTA
FM IF AMP
FM +B LINE
C175
0.01
Q106
UN411FTA
(FM:ON)
(0V)
13.9V
14V
4.7K
10K
2.4V
(13.9V)
IC101
LA1832A
FM/AM IF AMP,DET/AM OSC,
MIX/FM MPX
A
D
B
C
C109
0.01
C114
50V3.3
R120 47K
C115
25V4.7
C116
8200P
C117
820P
R121
3.3K
X101
(456KHz)
C120
50V1
C119
0.018
C118
0.018
C143
50V1
C144
50V1
R139
2.7K
R141
10K
R147
470K
R143
2.2K
C141
50V1
R171
1K
1.9V
4.4V
1.3V
Q107
C137
270P
R145
1K
Q107,108
2SC3311ARSTA
BUFFER AMP
R148
470K
R144
2.2K
C142
50V1
R172
1K
R140
2.7K
R142
10K
1.9V
4.4V
1.3V
Q108
C138
270P
R146
1K
(4.5V)
4V
(6V)
5.5V
2.2V
2.2V
(0.5V)
1V
(1.8V)
1.5V
(1.5V)
2.4V
(1V)
1.7V
2V
1.2V
1.2V
(0V)
4.5V
AM OSC
AM MIX
AM RF AMP
VCO
DECODER
FREQUENCY DIVIDER
STEREO SWITCH
FM/AM IF AMP
DET
PHASE DET
R118
5.6K
2V
5.5V
(6V)
2V
2V
0V
0V
(5.2V)
3.6V
(4.4V)
5.5V
(6V)
0V
4.3V
(2.1V)
4.3V
(1.1V)
C127
16V22
C126
0.1
C150
0.1
C106
0.01
X102
(10.65MHz)
R124
270
R173
470
C122
50V2.2
C121
50V1
R122
2.7K
R119
18K
C125
15P
Z102
C148
0.01
C196
1000P
C123
50V1
R126
4.7K
R125
4.7K
R175
1K
R149
68
C128
0.01
C129
6.3V100
C149
0.01
A
B
D
B
F
C
E
A
14V
B A C D
A
B
A B
14V
CN102
DATA1
CE1
CK1
IF DATA
Lch OUT
Rch OUT
CN101
+B(3)
SD
ST EYE
+B(4)
VT
GND
To M MAIN
CIRCUIT(CN102A)
on page 42
To M MAIN
CIRCUIT(CN101A)
on page 42

- ● : Rec out signal (Lch)
- ● : FM signal
- ● : AM signal
- ● : Surround speaker drive signal (Lch)
- ● : Center speaker drive signal
- ● : Subwoofer speaker drive signal

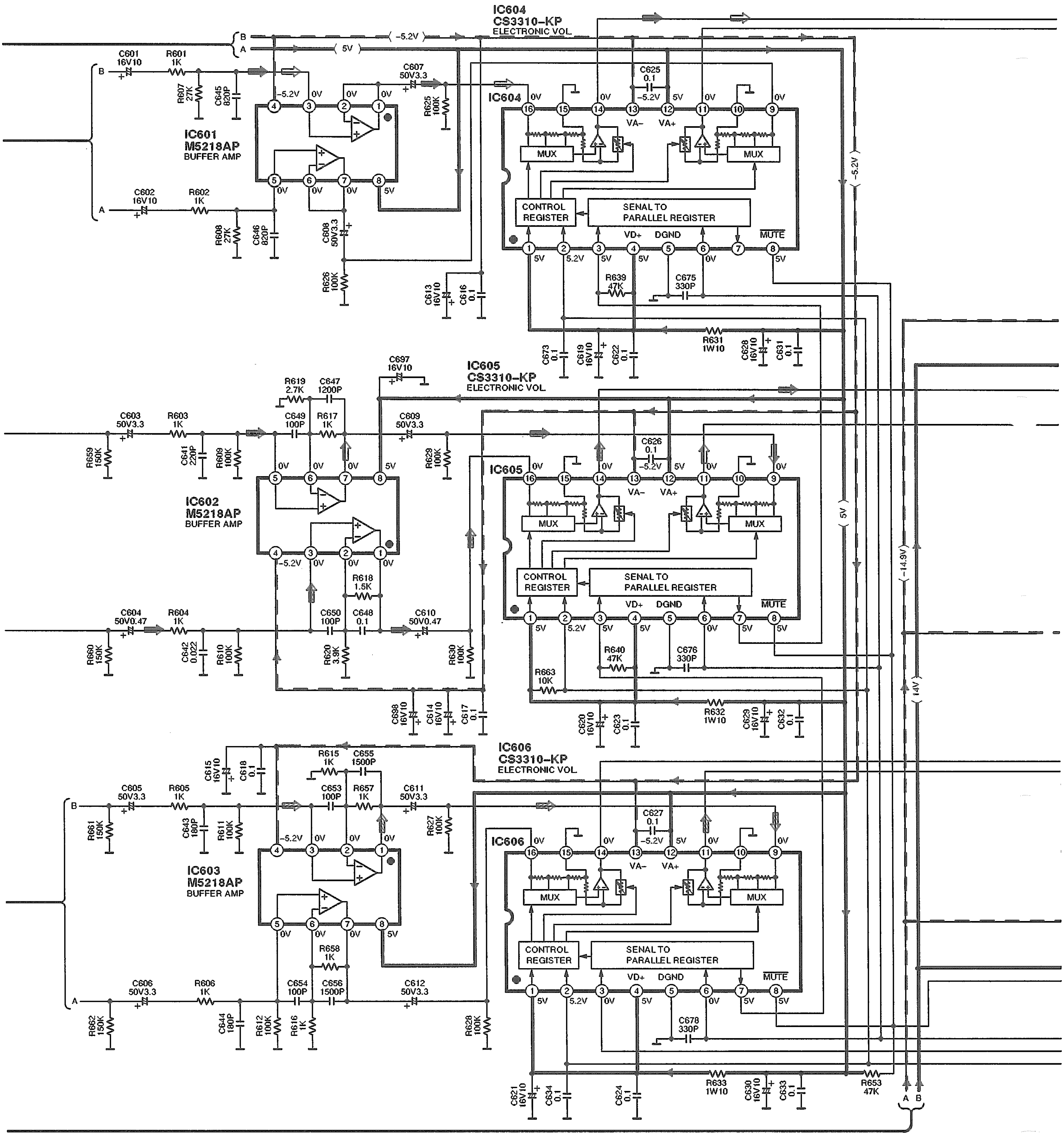
L IN/OUT TERMINAL CIRCUIT (P.C.Board:on page 65)


AUDIO
JK401 Lch CD Rch
R401 1K
R402 1K
C409 150P
C410 150P
JK401 Lch REC(OUT) Rch
TAPE
JK402 Lch PLAY(IN) Rch
R403 1K
R404 1K
R405 1K
R406 1K
C401 150P
C402 150P
C411 150P
C412 150P
JK402 Lch OUT Rch
VCR1
JK403 Lch IN Rch
R407 1K
R408 1K
R409 1K
R410 1K
C403 150P
C404 150P
C413 150P
C414 150P
JK403 Lch VCR2 IN Rch
R411 1K
R412 1K
C405 150P
C406 150P
JK404 Lch VDP/VDP6CH (FRONT) IN Rch
R413 1K
R414 1K
C415 150P
C416 150P
JK404 Lch TV IN Rch
R415 1K
R416 1K
C407 150P
C408 150P
C446 0.01
Z401
REC OUT SIGNAL (Lch)
R417 1K
C419 25V4.7
C421 0.01
IC401 TC9163N INPUT SELECTOR
13.4V
-14.4V
DATA CLK STB GND
X1 X2 X3 X4 X5 X6 X7 X8
A C E G I K M
B D F H J L N
C420 25V4.7
C422 0.01
R418 1K
R425 10K
R426 10K
R421 10K
R426 100P
(-14.9V)
(14V)
R419 1K
C417 25V4.7
C423 0.01
IC402 TC9164N INPUT SELECTOR
5V 0V
R423 10K
R424 10K
R420 1K
C418 25V4.7
C424 0.01
R422 10K
C425 100P
R323 10K
R324 6.8K
CN401
VCR3 L GND VCR3 R GND
To G OPERATION(2) CIRCUIT (JW401) on page 55
CN802A
CN802
CN803A
CN803
M MAIN CIRCUIT (P.C.Board: on pages 66,67)
E801
C888 0.01
R1005 1K
R1003 1/2W82
R1006 33
R1004 1K
D801 MA4075MTA
C801 0.01
R1007 47K
R1008 47K
R1009 1K
R1010 1K
R1011 1K
CN1101B
GND D.AV D.DV
CN1307A
GND +B(5) VSEL1 VSEL3 VSEL2
CN101A
GND VT +B(4) ST EYE SD +B(3)
CN102A
Rch IN Lch IN IF DATA CK1 CE1 DATA1
To I DIGITAL CIRCUIT (JW1101) on page 50
To K VIDEO TERMINAL CIRCUIT (CN1307) on page 57
To A TUNER CIRCUIT (CN101) on page 41
To A TUNER CIRCUIT (CN102) on page 41

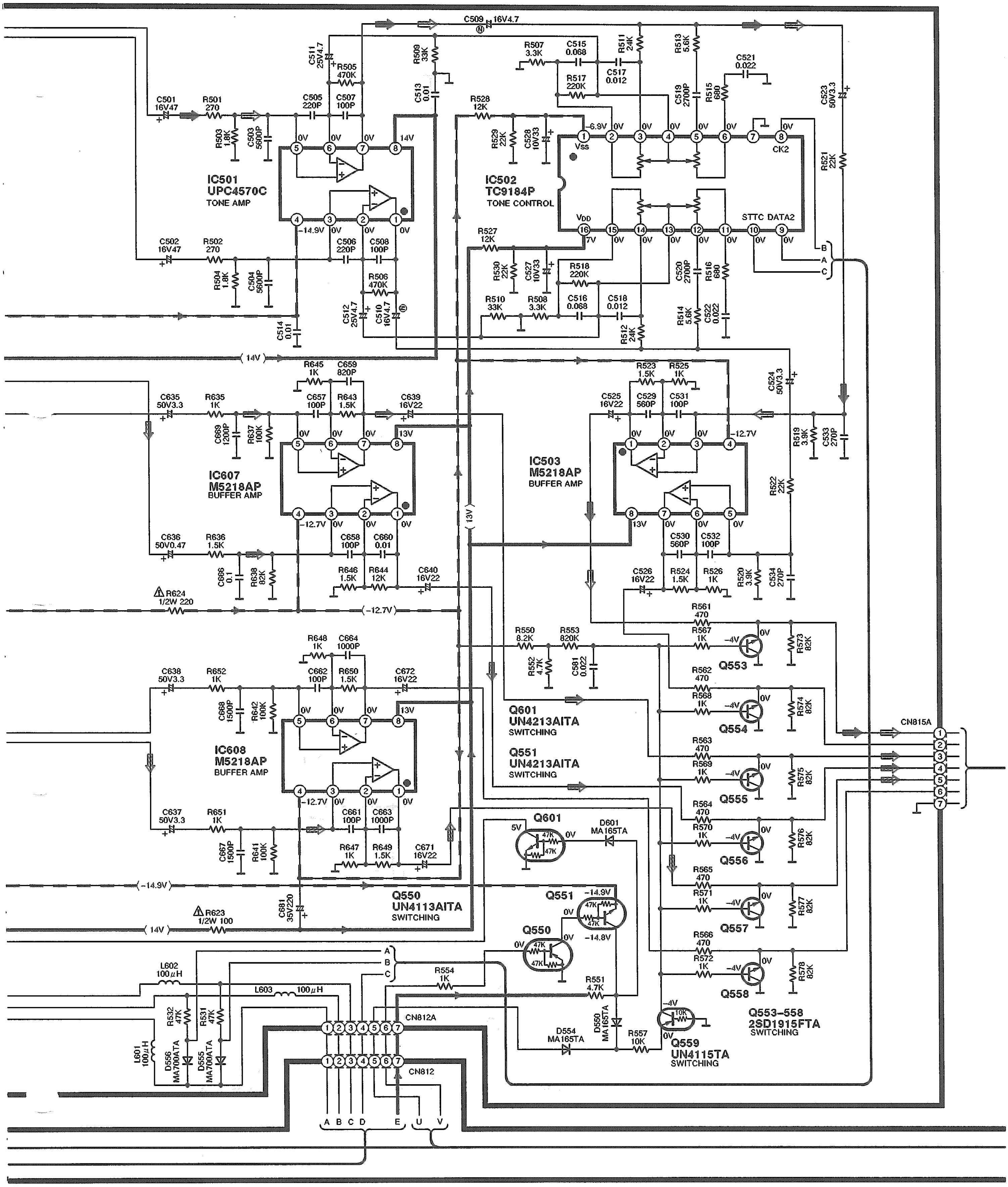

IC403
UPC4570C
BUFFER AMP
R427 470
R428 470
C429 16V10
C430 16V10
C427 100P
C428 100P
R429 47K
R430 47K
R431 100K
R432 100K
C433 16V22
C431 0.01
C434 16V22
C432 0.01
0V
14V
-14.9V
⚠IC404
AN78L05TA
REGULATOR
⚠IC405
AN79L05TA
REGULATOR
14V
5V
-5.2V
-14.9V
C438 50V1
C441 16V10
C440 0.1
C445 16V10
C444 0.1
C442 50V1
5V
-14.9V
14V
A
B
C302 16V10
C303 16V10
R313 1K
R310 10K
R311 10K
C312 25V4.7
C313 0.01
IC301
TC9162N
SIGNAL SELECTOR
13.4V
X1
X2
X3
X4
X5
X6
X7
DATA
CLK
STB
GND
-14.4V
R314 1K
C314 25V4.7
C315 0.01
R318 3.3K
R317 3.3K
R301 220K
R316 10K
R312 10K
C311 100P
R315 10K
(-14.9V)
(14V)
CN804A
CN804
H
I
CN1101A
GND
GND
GND
Lch OUT
GND
Rch OUT
To I DIGITAL CIRCUIT (JW1101) on page 50
CN1102A
SR IN
GND
SL IN
SW IN
GND
C IN
Rch IN
GND
Lch IN
To I DIGITAL CIRCUIT (JW1102) on page 51
CN301
V.SR
GND
V.SL
V.SW
V.C
To J S-VIDEO JACK CIRCUIT (JW301) on page 56
CN1405A
SSEL
VMUTE
EXDET
STOSD
DT1
CK1
D.GND
To K VIDEO TERMINAL CIRCUIT (CN1405) on page 57
CN809
DT1
STOSD
EXDET
VMUTE
SSEL
STTC
STVR
ST91
To B FL PANEL CIRCUIT (CN809A) on page 53
CN810
CK1
IF DATA
OVLD
PRELAY
CK2
DT2
CE
DT1
To B FL PANEL CIRCUIT (CN810A) on page 53
CN811
FMST
HP Rch
HP Lch
+B(2)
AC2.6V
AC2.6V
-B(1)
CK1
To B FL PANEL CIRCUIT (CN811A) on page 53
M N F D E B C B E C A O P Q R S T

L IN/OUT TERMINAL CIRCUIT (P.C.Board:on page 65)

- ● ⇨ : FM signal
- ● ➡ : AM signal
- ● ▨ : Surround speaker drive signal (Lch)
- ● ➡ : Center speaker drive signal
- ● ➡ : Subwoofer speaker drive signal

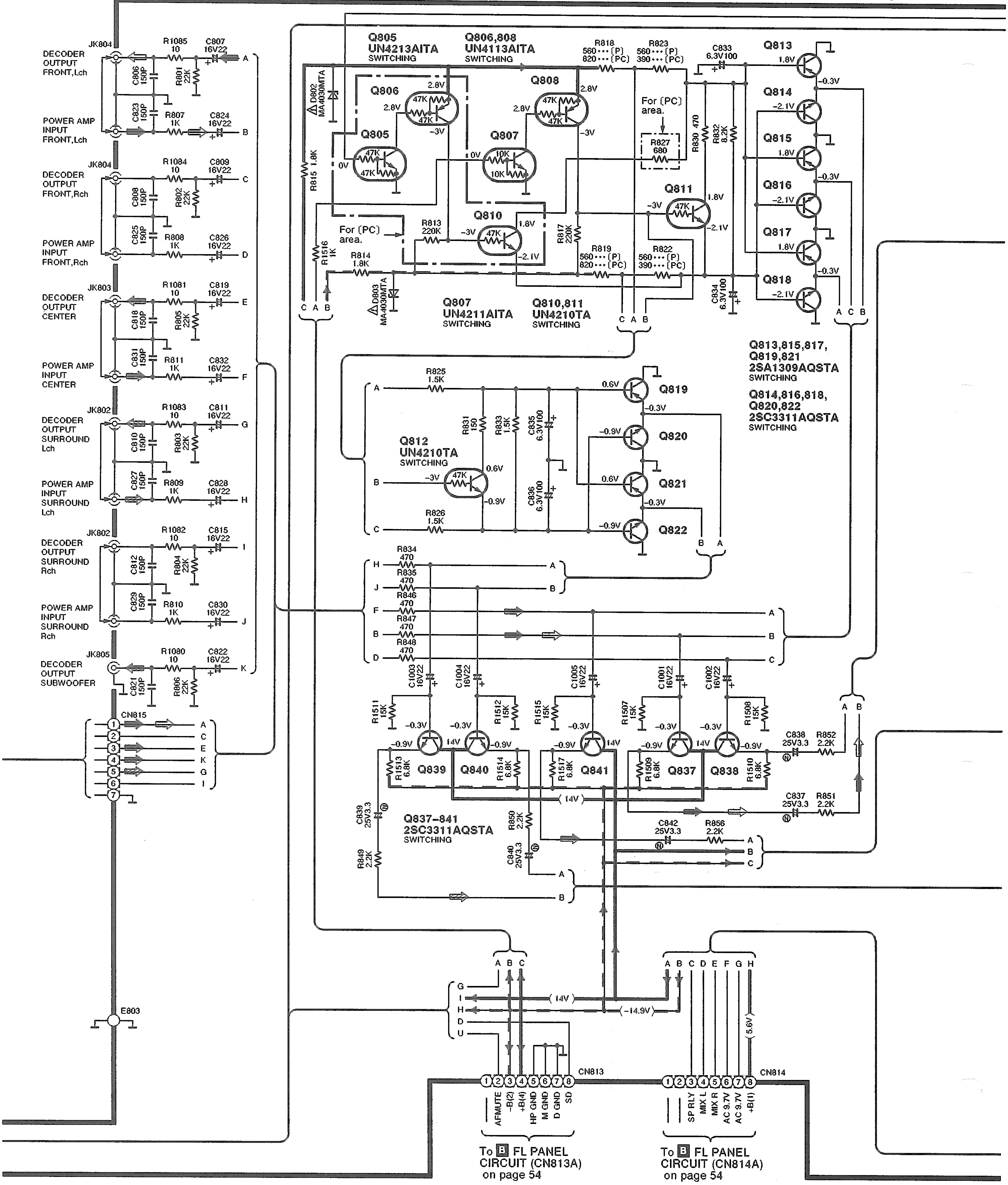

IC604
CS3310-KP
ELECTRONIC VOL.
IC601
M5218AP
BUFFER AMP
IC605
CS3310-KP
ELECTRONIC VOL.
IC602
M5218AP
BUFFER AMP
IC606
CS3310-KP
ELECTRONIC VOL.
IC603
M5218AP
BUFFER AMP
MUX
CONTROL REGISTER
SENAL TO PARALLEL REGISTER
VA-
VA+
VD+
DGND
MUTE
-5.2V
5V
5.2V
0V
-14.9V
14V
A
B
C601 16V10
R601 1K
R607 27K
C645 820P
C602 16V10
R602 1K
R608 27K
C646 820P
C607 50V3.3
R625 100K
C608 50V3.3
R626 100K
C613 16V10
C616 0.1
C625 0.1
R639 47K
C675 330P
R631 1W10
C673 0.1
C619 16V10
C622 0.1
C628 16V10
C631 0.1
C697 16V10
R619 2.7K
C647 1200P
C603 50V3.3
R603 1K
C649 100P
R617 1K
C609 50V3.3
R659 150K
C641 220P
R609 100K
R629 100K
C626 0.1
R618 1.5K
C604 50V0.47
R604 1K
C650 100P
C648 0.1
C610 50V0.47
R660 150K
C642 0.022
R610 100K
R620 3.9K
R630 100K
R640 47K
C676 330P
R663 10K
R632 1W10
C698 16V10
C614 16V10
C617 0.1
C620 16V10
C623 0.1
C629 16V10
C632 0.1
C615 16V10
C618 0.1
R615 1K
C655 1500P
C605 50V3.3
R605 1K
C653 100P
R657 1K
C611 50V3.3
R661 150K
C643 180P
R611 100K
R627 100K
C627 0.1
R658 1K
C606 50V3.3
R606 1K
C654 100P
C656 1500P
C612 50V3.3
R662 150K
C644 180P
R612 100K
R616 1K
R628 100K
C678 330P
R633 1W10
R653 47K
C621 16V10
C634 0.1
C624 0.1
C630 16V10
C633 0.1

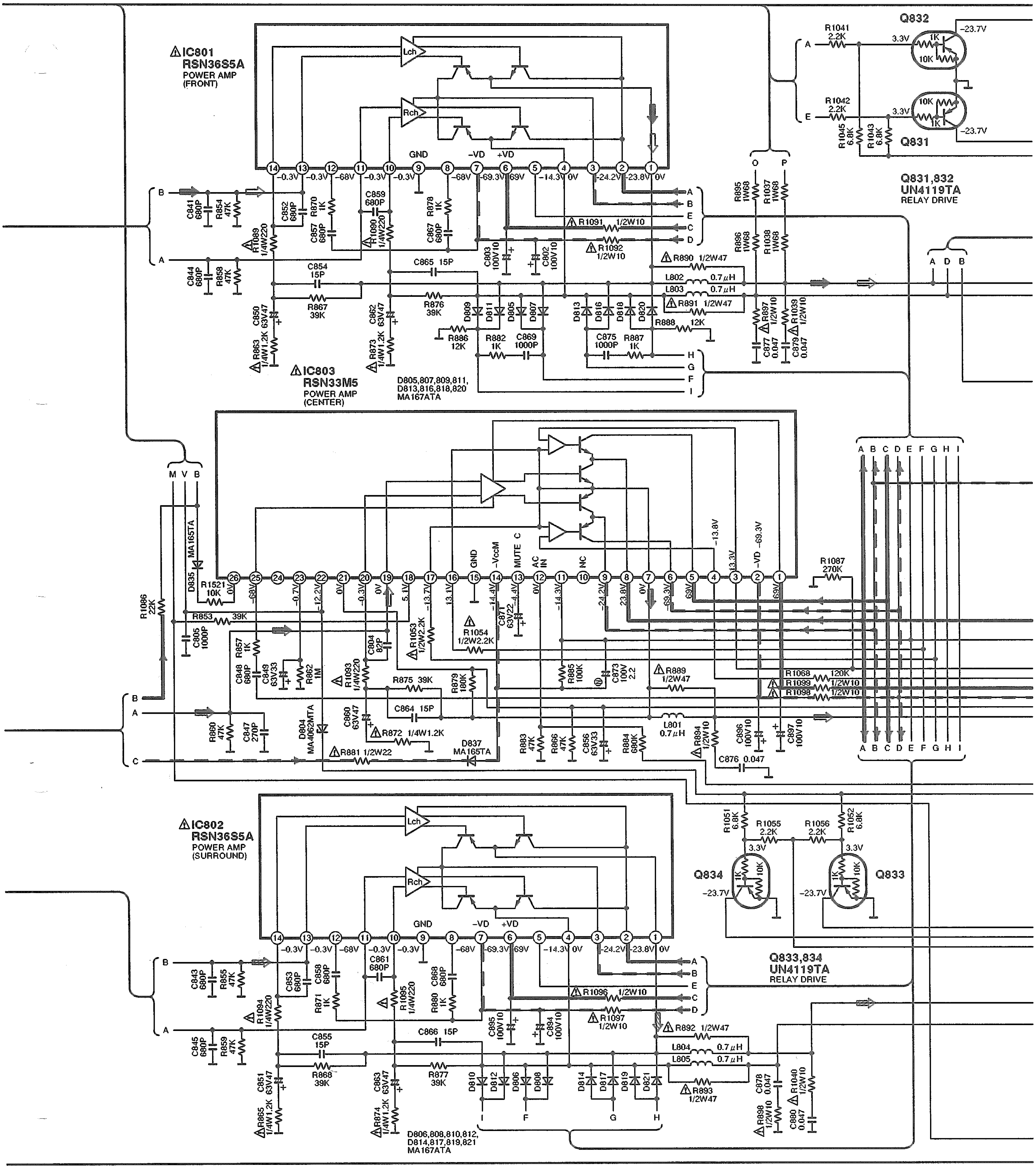
M MAIN CIRCUIT (P.C.Board:on pages 66,67)


IC501
UPC4570C
TONE AMP
IC502
TC9184P
TONE CONTROL
Vss
VDD
CK2
STTC DATA2
IC607
M5218AP
BUFFER AMP
IC503
M5218AP
BUFFER AMP
IC608
M5218AP
BUFFER AMP
Q601
UN4213AITA
SWITCHING
Q551
UN4213AITA
SWITCHING
Q550
UN4113AITA
SWITCHING
Q553
Q554
Q555
Q556
Q557
Q558
Q553-558
2SD1915FTA
SWITCHING
Q559
UN4115TA
SWITCHING
D601
MA165TA
D554
MA165TA
D550
MA165TA
D556
MA700ATA
D555
MA700ATA
CN815A
CN812A
CN812
L601 100μH
L602 100μH
L603 100μH
C501 16V47
R501 270
R503 1.8K
C503 5600P
C502 16V47
R502 270
R504 1.8K
C504 5600P
C505 220P
C507 100P
C506 220P
C508 100P
C509 16V4.7
C511 25V4.7
R505 470K
R506 470K
C512 25V4.7
C510 16V4.7
R509 33K
C513 0.01
C514 0.01
R507 3.3K
C515 0.068
R517 220K
C517 0.012
R511 24K
R513 5.6K
C519 2700P
R515 680
C521 0.022
C523 50V3.3
R521 22K
R528 12K
R529 22K
C528 10V33
R527 12K
R530 22K
C527 10V33
R518 220K
R510 33K
R508 3.3K
C516 0.068
C518 0.012
R512 24K
C520 2700P
R516 680
R514 5.6K
C522 0.022
R645 1K
C659 820P
C657 100P
R643 1.5K
C639 16V22
C635 50V3.3
R635 1K
C669 1200P
R637 100K
C636 50V0.47
R636 1.5K
C658 100P
C660 0.01
C666 0.1
R638 82K
R646 1.5K
R644 12K
C640 16V22
R624 1/2W 220
R523 1.5K
R525 1K
C524 50V3.3
C525 16V22
C529 560P
C531 100P
R519 3.9K
C533 270P
R522 22K
C530 560P
C532 100P
C526 16V22
R524 1.5K
R526 1K
R520 3.9K
C534 270P
R561 470
R567 1K
R573 82K
R550 8.2K
R553 820K
R552 4.7K
C581 0.022
R562 470
R568 1K
R574 82K
R563 470
R569 1K
R575 82K
R564 470
R570 1K
R576 82K
R565 470
R571 1K
R577 82K
R566 470
R572 1K
R578 82K
R648 1K
C664 1000P
C662 100P
R650 1.5K
C672 16V22
C638 50V3.3
R652 1K
C668 1500P
R642 100K
C637 50V3.3
R651 1K
C667 1500P
R641 100K
C661 100P
C663 1000P
R647 1K
R649 1.5K
C671 16V22
C681 35V220
R623 1/2W 100
R554 1K
R551 4.7K
R557 10K
R532 47K
R531 47K
47K
10K
14V
13V
7V
0V
-6.9V
-14.9V
-12.7V
-14.8V
-4V
5V
(14V)
(13V)
(-12.7V)
(-14.9V)
A
B
C
D
E
U
V

M MAIN CIRCUIT (P.C.Board:on pages 66,67)

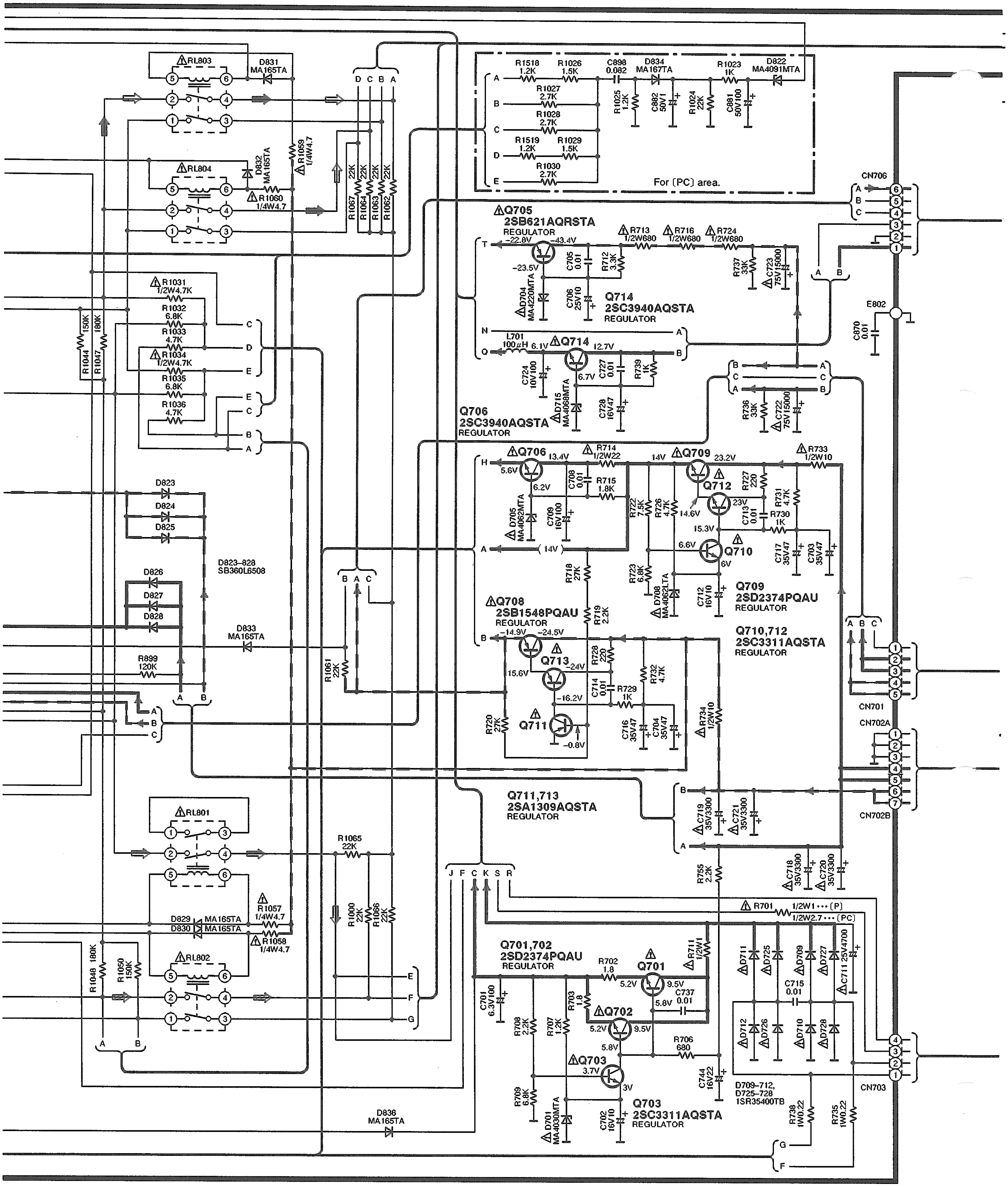
- ● ⇨ : FM signal
- ● ➡ : AM signal
- ● ▨ : Surround speaker drive signal (Lch)
- ● ➡ : Center speaker drive signal
- ● ➡ : Subwoofer speaker drive signal

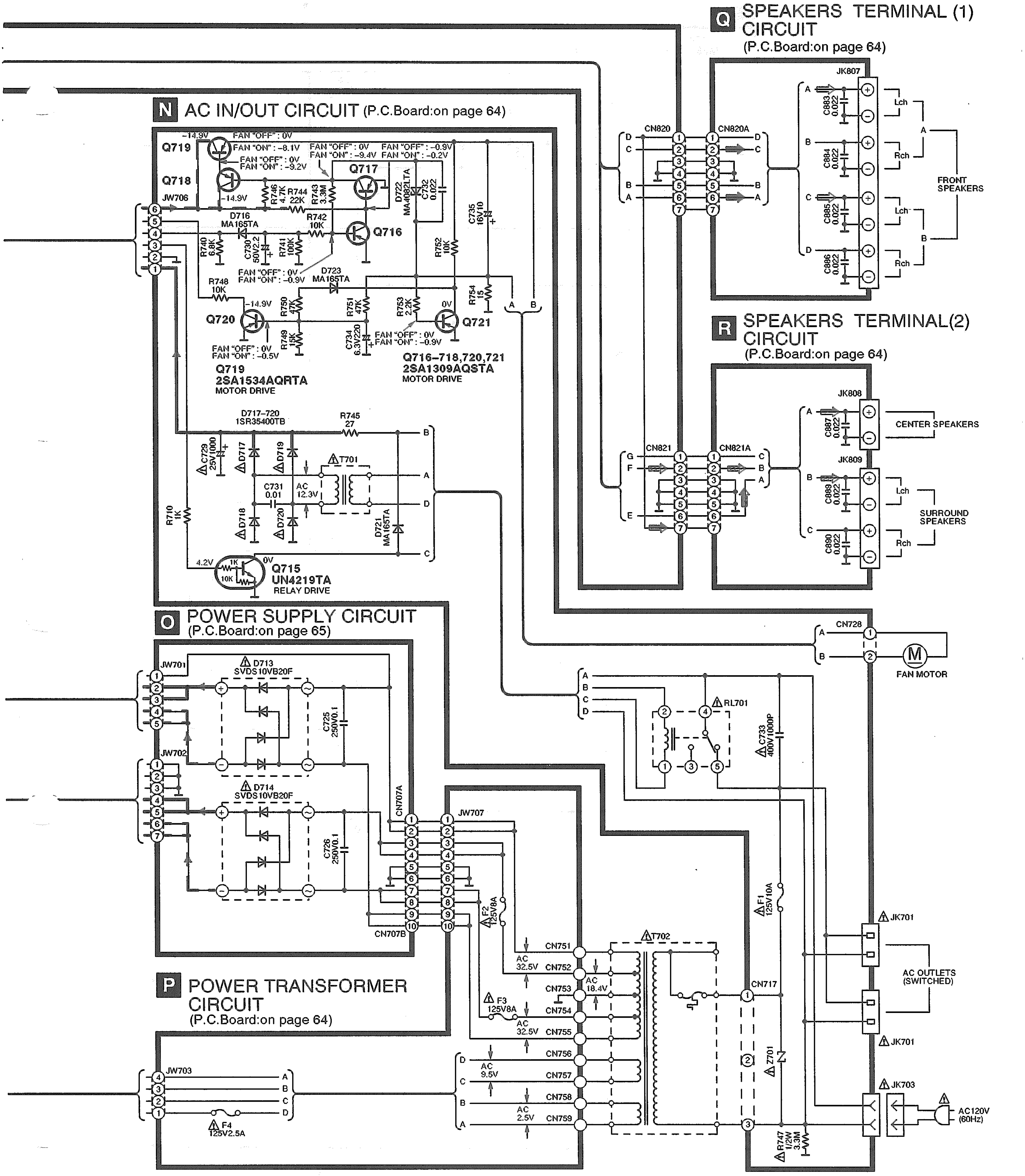

JK804
DECODER OUTPUT FRONT,Lch
POWER AMP INPUT FRONT,Lch
DECODER OUTPUT FRONT,Rch
POWER AMP INPUT FRONT,Rch
JK803
DECODER OUTPUT CENTER
POWER AMP INPUT CENTER
JK802
DECODER OUTPUT SURROUND Lch
POWER AMP INPUT SURROUND Lch
DECODER OUTPUT SURROUND Rch
POWER AMP INPUT SURROUND Rch
JK805
DECODER OUTPUT SUBWOOFER
CN815
E803
Q805 UN4213AITA SWITCHING
Q806,808 UN4113AITA SWITCHING
Q807 UN4211AITA SWITCHING
Q810,811 UN4210TA SWITCHING
For (PC) area.
Q813,815,817, Q819,821 2SA1309AQSTA SWITCHING
Q814,816,818, Q820,822 2SC3311AQSTA SWITCHING
Q812 UN4210TA SWITCHING
Q837–841 2SC3311AQSTA SWITCHING
CN813
AFMUTE
–B(2)
+B(4)
HP GND
M GND
D GND
SD
CN814
SP RLY
MIX L
MIX R
AC 9.7V
AC 9.7V
+B(1)
(14V)
(–14.9V)
(5.6V)
To B FL PANEL CIRCUIT (CN813A) on page 54
To B FL PANEL CIRCUIT (CN814A) on page 54


IC801
RSN36S5A
POWER AMP
(FRONT)
Lch
Rch
GND
-VD
+VD
-0.3V
-68V
-69.3V
69V
-14.3V
0V
-24.2V
-23.8V
C841 680P
R854 47K
C852 680P
R870 1K
C859 680P
R878 1K
C857 680P
C867 680P
R1089 1/4W220
R1090 1/4W220
C803 100V10
C802 100V10
R1091 1/2W10
R1092 1/2W10
C844 680P
R858 47K
C854 15P
C865 15P
R867 39K
R876 39K
C850 63V47
C862 63V47
R863 1/4W1.2K
R873 1/4W1.2K
R886 12K
R882 1K
C869 1000P
C875 1000P
R887 1K
R888 12K
R890 1/2W47
R891 1/2W47
L802 0.7μH
L803 0.7μH
R895 1W68
R1037 1W68
R896 1W68
R1038 1W68
R897 1/2W10
R1039 1/2W10
C877 0.047
C879 0.047
D809
D811
D805
D807
D813
D816
D818
D820
D805,807,809,811,
D813,816,818,820
MA167ATA
Q832
R1041 2.2K
3.3V
1K
10K
-23.7V
R1042 2.2K
R1045 6.8K
R1043 6.8K
Q831
Q831,832
UN4119TA
RELAY DRIVE
IC803
RSN33M5
POWER AMP
(CENTER)
M V B
D835 MA165TA
R1086 22K
R1521 10K
R853 39K
C805 1000P
R857 1K
C848 680P
C849 63V33
R862 1M
C804 82P
R1053 1/2W2.2K
R1054 1/2W2.2K
C871 63V22
R1093 1/4W220
R875 39K
R879 180K
R885 100K
C873 100V 2.2
R889 1/2W47
C864 15P
C860 63V47
R872 1/4W1.2K
D837 MA165TA
R881 1/2W22
D804 MA4062MTA
R860 47K
C847 270P
R883 47K
R866 47K
C856 63V33
R884 680K
L801 0.7μH
R894 1/2W10
C896 100V10
C897 100V10
C876 0.047
R1087 270K
R1068 120K
R1099 1/2W10
R1098 1/2W10
GND
-VccM
MUTE C
AC IN
NC
-VD -69.3V
-13.8V
13.3V
-12.2V
5.1V
-13.7V
13.1V
-14.4V
-4.4V
23.8V
A B C D E F G H I
IC802
RSN36S5A
POWER AMP
(SURROUND)
C843 680P
R855 47K
C853 680P
C858 680P
C861 680P
C868 680P
R871 1K
R880 1K
R1094 1/4W220
R1095 1/4W220
C895 100V10
C894 100V10
R1096 1/2W10
R1097 1/2W10
C845 680P
R859 47K
C855 15P
C866 15P
R868 39K
R877 39K
C851 63V47
C863 63V47
R865 1/4W1.2K
R874 1/4W1.2K
D810
D812
D806
D808
D814
D817
D819
D821
R892 1/2W47
R893 1/2W47
L804 0.7μH
L805 0.7μH
C878 0.047
R1040 1/2W10
R898 1/2W10
C880 0.047
D806,808,810,812,
D814,817,819,821
MA167ATA
R1051 6.8K
R1055 2.2K
R1056 2.2K
R1052 6.8K
Q834
Q833
Q833,834
UN4119TA
RELAY DRIVE

M MAIN CIRCUIT (P.C.Board:on pages 66,67)

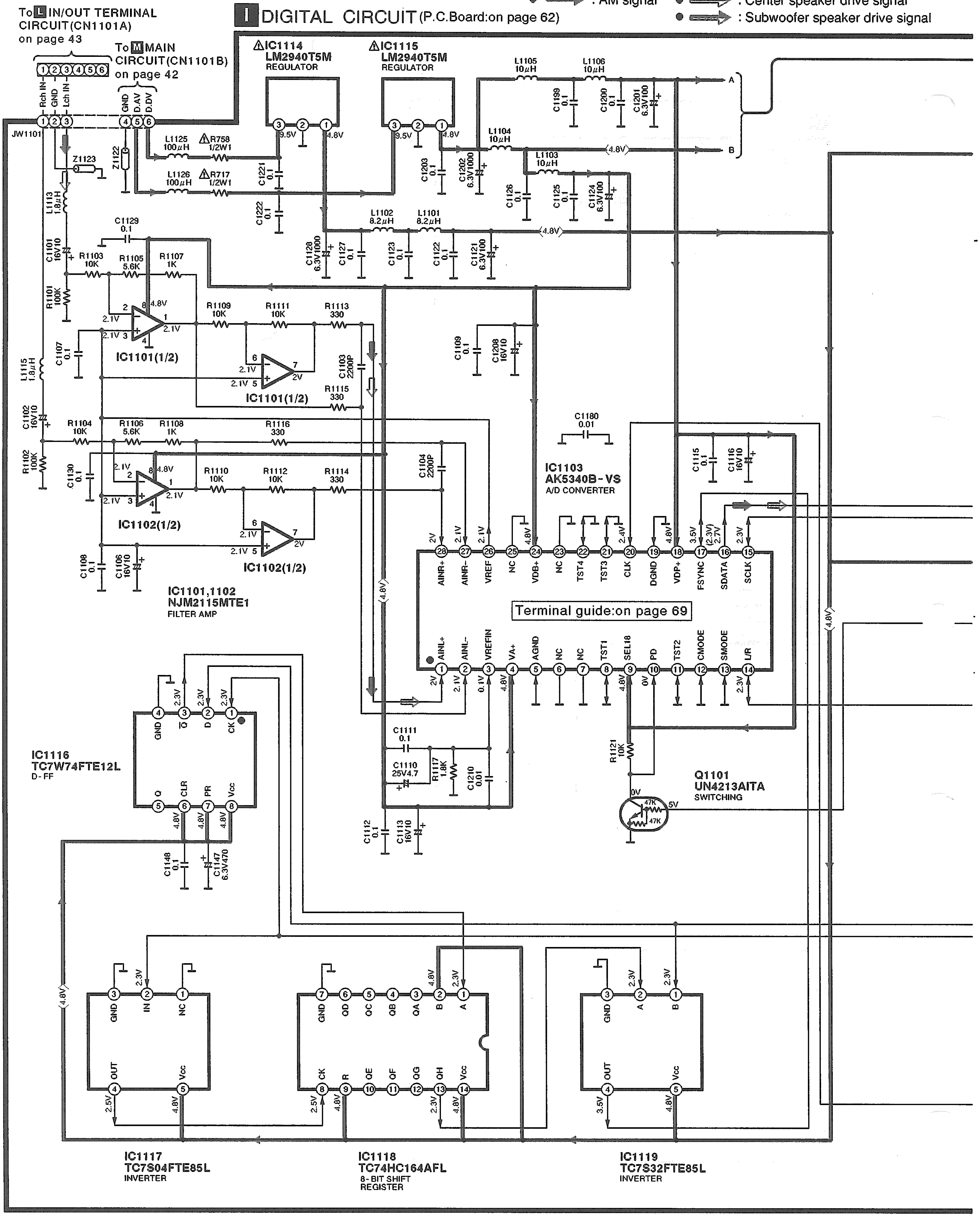
- ● ⇨ : FM signal
- ● ➡ : AM signal
- ● ▨⇨ : Surround speaker drive signal (Lch)
- ● ⇨ : Center speaker drive signal

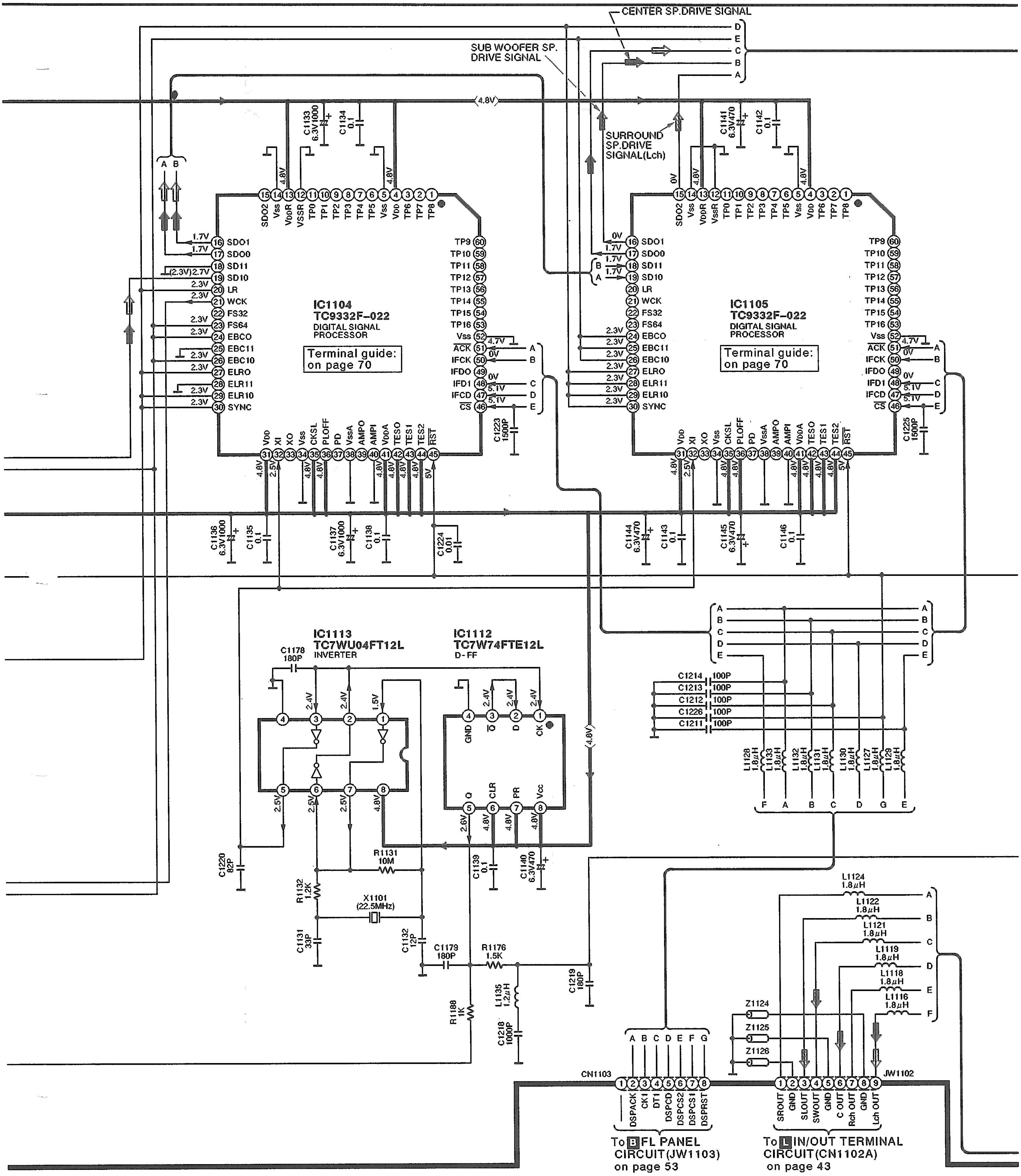

RL803
D831 MA165TA
RL804
D832 MA165TA
R1059 1/4W4.7
R1060 1/4W4.7
D C B A
R1067 22K
R1064 22K
R1063 22K
R1062 22K
R1518 1.2K
R1026 1.5K
C898 0.082
D834 MA167TA
R1023 1K
D822 MA4091MTA
R1027 2.7K
R1028 2.7K
R1519 1.2K
R1029 1.5K
R1030 2.7K
R1025 1.2K
C882 50V1
R1024 22K
C881 50V100
For (PC) area.
CN706
Q705 2SB621AQRSTA REGULATOR
-22.8V
-43.4V
-23.5V
C705 0.01
R712 3.3K
R713 1/2W680
R716 1/2W680
R724 1/2W680
R737 33K
C723 75V15000
D704 MA4220MTA
C706 25V10
Q714 2SC3940AQSTA REGULATOR
E802
C870 0.01
R1031 1/2W4.7K
R1032 6.8K
R1033 4.7K
R1034 1/2W4.7K
R1035 6.8K
R1036 4.7K
R1044 150K
R1047 180K
L701 100µH
6.1V
Q714
12.7V
C724 10V100
6.7V
C727 0.01
R739 1K
D715 MA4068MTA
C728 16V47
R736 33K
C722 75V15000
Q706 2SC3940AQSTA REGULATOR
Q706
13.4V
R714 1/2W22
14V
Q709
23.2V
R733 1/2W10
5.6V
6.2V
C708 0.01
R715 1.8K
R727 220
Q712
R731 4.7K
D705 MA4062MTA
C709 16V100
R722 7.5K
R726 4.7K
14.6V
23V
C713 0.01
R730 1K
15.3V
(14V)
6.6V
Q710
6V
C717 35V47
C703 35V47
D823
D824
D825
D823–828 SB360L6508
D826
D827
D828
D833 MA165TA
R899 120K
R718 27K
R723 6.8K
D708 MA4062LTA
C712 16V10
Q709 2SD2374PQAU REGULATOR
Q708 2SB1548PQAU REGULATOR
-14.9V
-24.5V
R719 2.2K
Q710,712 2SC3311AQSTA REGULATOR
R1061 22K
15.6V
Q713
-24V
R728 220
R732 4.7K
C714 0.01
R729 1K
-16.2V
CN701
R720 27K
Q711
-0.8V
C716 35V47
C704 35V47
R734 1/2W10
CN702A
Q711,713 2SA1309AQSTA REGULATOR
C719 35V3300
C721 35V3300
CN702B
RL801
R1065 22K
J F C K S R
R755 2.2K
C718 35V3300
C720 35V3300
R1057 1/4W4.7
D829 MA165TA
D830 MA165TA
R1058 1/4W4.7
R1000 22K
R1066 22K
R701 1/2W1 ··· (P) 1/2W2.7 ··· (PC)
RL802
R1048 180K
R1050 150K
Q701,702 2SD2374PQAU REGULATOR
R702 1.8
Q701
5.2V
9.5V
C737 0.01
5.8V
R711 1/2W1
D711
D725
D709
D727
C711 25V4700
C715 0.01
C701 6.3V100
R703 1.8
Q702
5.2V
9.5V
5.8V
R708 2.2K
R707 1.2K
R706 680
D712
D726
D710
D728
Q703
3.7V
3V
C744 16V22
D709–712, D725–728 1SR35400TB
CN703
R709 6.8K
D701 MA4030MTA
C702 16V10
Q703 2SC3311AQSTA REGULATOR
R738 1W0.22
R735 1W0.22
D836 MA165TA


Q SPEAKERS TERMINAL (1) CIRCUIT
(P.C.Board:on page 64)
JK807
C883 0.022
C884 0.022
C885 0.022
C886 0.022
Lch
Rch
FRONT SPEAKERS
CN820
CN820A
N AC IN/OUT CIRCUIT (P.C.Board:on page 64)
Q719
Q718
Q717
Q716
Q720
Q721
JW706
FAN "OFF" : 0V
FAN "ON" : -8.1V
FAN "OFF" : 0V
FAN "ON" : -9.2V
FAN "OFF" : 0V
FAN "ON" : -9.4V
FAN "OFF" : -0.9V
FAN "ON" : -0.2V
FAN "OFF" : 0V
FAN "ON" : -0.9V
FAN "OFF" : 0V
FAN "ON" : -0.5V
-14.9V
D716 MA165TA
D722 MA4082LTA
D723 MA165TA
R746 4.7K
R744 22K
R743 3.3M
R742 10K
C732 0.022
C735 16V10
R740 6.8K
C730 50V2.2
R741 100K
R752 10K
R748 10K
R750 47K
R751 47K
R753 2.2K
R754 15
R749 15K
C734 6.3V220
Q719 2SA1534AQRTA MOTOR DRIVE
Q716–718,720,721 2SA1309AQSTA MOTOR DRIVE
D717–720 1SR35400TB
R745 27
C729 25V1000
D717
D719
T701
C731 0.01
AC 12.3V
D718
D720
D721 MA165TA
R710 1K
4.2V
0V
Q715 UN4219TA RELAY DRIVE
R SPEAKERS TERMINAL(2) CIRCUIT
(P.C.Board:on page 64)
JK808
C887 0.022
CENTER SPEAKERS
JK809
C889 0.022
C890 0.022
SURROUND SPEAKERS
CN821
CN821A
CN728
FAN MOTOR
O POWER SUPPLY CIRCUIT
(P.C.Board:on page 65)
JW701
D713 SVDS10VB20F
C725 250V0.1
JW702
D714 SVDS10VB20F
C726 250V0.1
CN707A
CN707B
JW707
RL701
C733 400V1000P
F2 125V8A
F1 125V10A
P POWER TRANSFORMER CIRCUIT
(P.C.Board:on page 64)
T702
CN751
CN752
CN753
CN754
CN755
CN756
CN757
CN758
CN759
AC 32.5V
AC 18.4V
F3 125V8A
AC 32.5V
AC 9.5V
AC 2.5V
CN717
Z701
R747 1/2W 3.3M
JK701
AC OUTLETS (SWITCHED)
JK703
AC120V (60Hz)
JW703
F4 125V2.5A

● ⇨ : FM signal
● ➡ : AM signal
● ▨⇨ : Surround speaker drive signal (Lch)
● ⇨ : Center speaker drive signal
● ⇨ : Subwoofer speaker drive signal

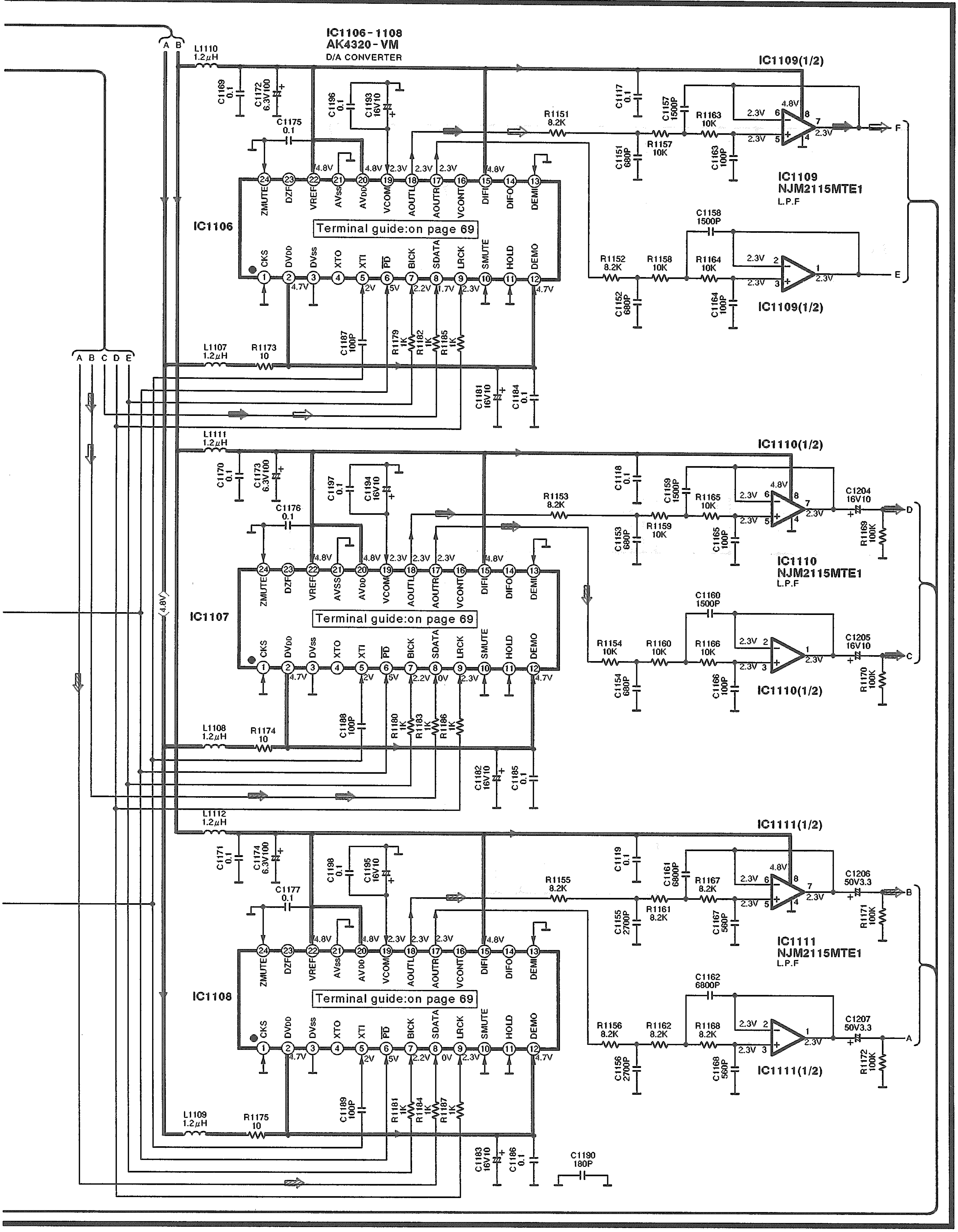
I DIGITAL CIRCUIT (P.C.Board:on page 62)


To L IN/OUT TERMINAL CIRCUIT(CN1101A) on page 43
To M MAIN CIRCUIT(CN1101B) on page 42
Rch IN
GND
Lch IN
GND
D.AV
D.DV
JW1101
ΔIC1114
LM2940T5M
REGULATOR
ΔIC1115
LM2940T5M
REGULATOR
9.5V
4.8V
L1125 100μH
ΔR758 1/2W1
L1126 100μH
ΔR717 1/2W1
Z1123
Z1122
L1113 1.8μH
C1221 0.1
C1222 0.1
C1203 0.1
C1202 6.3V1000
L1105 10μH
L1106 10μH
C1199 0.1
C1200 0.1
C1201 6.3V100
L1104 10μH
L1103 10μH
C1126 0.1
C1125 0.1
C1124 6.3V100
A
B
L1102 8.2μH
L1101 8.2μH
C1128 6.3V1000
C1127 0.1
C1123 0.1
C1122 0.1
C1121 6.3V100
C1129 0.1
C1101 16V10
R1103 10K
R1105 5.6K
R1107 1K
R1101 100K
IC1101(1/2)
R1109 10K
R1111 10K
R1113 330
R1115 330
C1103 2200P
C1107 0.1
L1115 1.8μH
C1102 16V10
R1104 10K
R1106 5.6K
R1108 1K
R1116 330
R1102 100K
C1130 0.1
IC1102(1/2)
R1110 10K
R1112 10K
R1114 330
C1104 2200P
C1108 0.1
C1106 16V10
IC1101,1102
NJM2115MTE1
FILTER AMP
C1109 0.1
C1208 16V10
C1180 0.01
IC1103
AK5340B-VS
A/D CONVERTER
C1115 0.1
C1116 16V10
AINR+
AINR-
VREF
NC
VDB+
NC
TST4
TST3
CLK
DGND
VDP+
FSYNC
SDATA
SCLK
Terminal guide:on page 69
AINL+
AINL-
VREFIN
VA+
AGND
NC
NC
TST1
SEL18
PD
TST2
CMODE
SMODE
L/R
2V
2.1V
0.1V
4.8V
0V
3.5V
(2.3V) 2.7V
2.3V
2.4V
C1111 0.1
C1110 25V4.7
R1117 1.8K
C1210 0.01
C1112 0.1
C1113 16V10
R1121 10K
Q1101
UN4213AITA
SWITCHING
47K
47K
5V
IC1116
TC7W74FTE12L
D-FF
GND
Q̄
D
CK
Q
CLR
PR
Vcc
C1148 0.1
C1147 6.3V470
GND
IN
NC
OUT
Vcc
2.5V
GND
QD
QC
QB
QA
B
A
CK
R
QE
QF
QG
QH
Vcc
GND
A
B
OUT
Vcc
IC1117
TC7S04FTE85L
INVERTER
IC1118
TC74HC164AFL
8-BIT SHIFT REGISTER
IC1119
TC7S32FTE85L
INVERTER

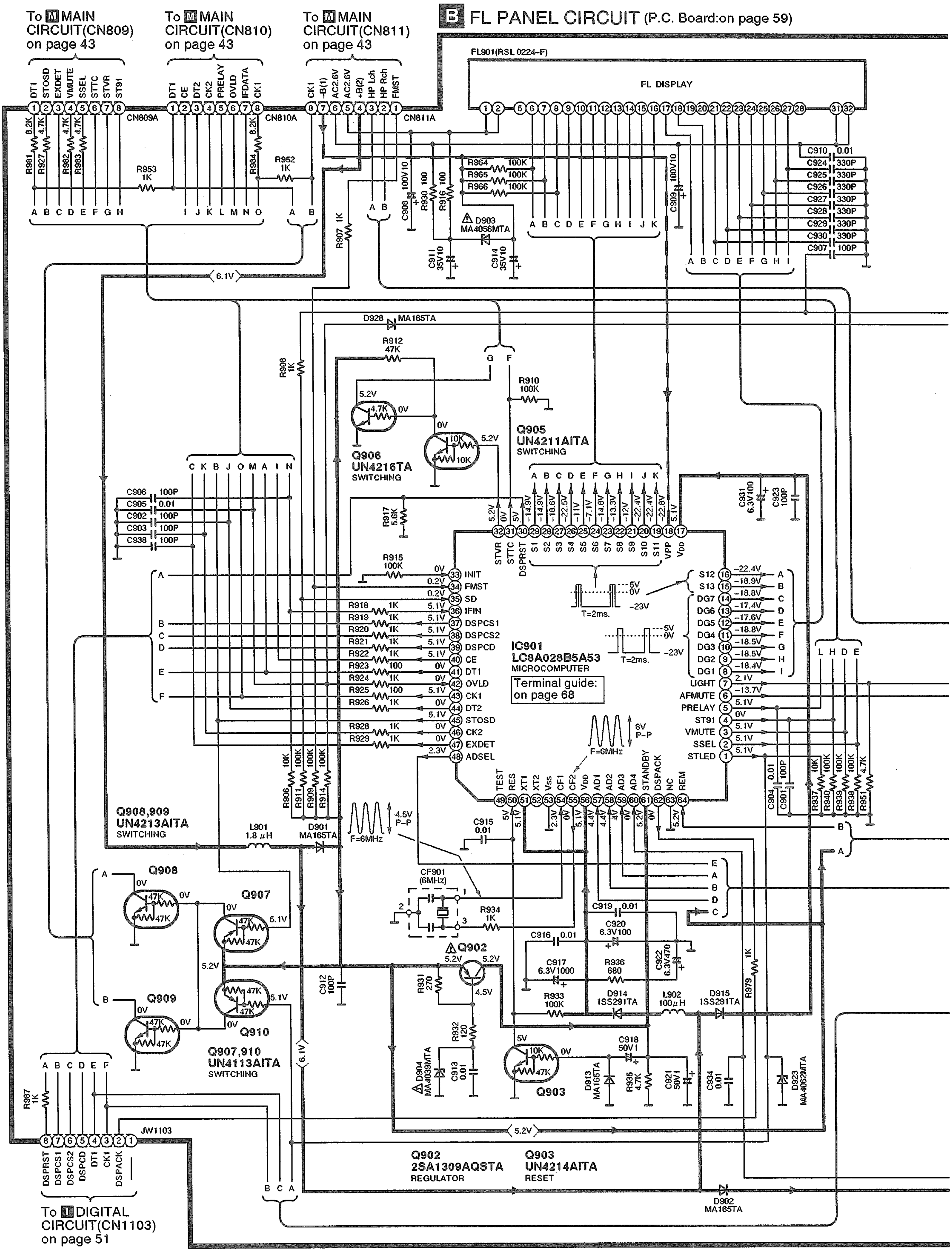

CENTER SP.DRIVE SIGNAL
SUB WOOFER SP. DRIVE SIGNAL
SURROUND SP.DRIVE SIGNAL(Lch)
(4.8V)
C1133 6.3V1000
C1134 0.1
C1141 6.3V470
C1142 0.1
IC1104
TC9332F-022
DIGITAL SIGNAL PROCESSOR
Terminal guide: on page 70
IC1105
TC9332F-022
DIGITAL SIGNAL PROCESSOR
Terminal guide: on page 70
SDO2 Vss VDDR VSSR TP0 TP1 TP3 TP4 TP5 Vss VDD TP6 TP7 TP8
SDO1 SDO0 SD11 SD10 LR WCK FS32 FS64 EBCO EBC11 EBC10 ELRO ELR11 ELR10 SYNC
TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16 Vss ACK IFCK IFDO IFD1 IFCD CS
VDD XI XO Vss CKSL PLOFF PD VssA AMPO AMPI VDDA TESO TES1 TES2 RST
1.7V 1.7V (2.3V)2.7V 2.3V 2.3V 2.3V 2.3V 2.3V 2.3V 2.3V 2.3V
4.7V 0V 0V 5.1V 5.1V
4.8V 2.5V 4.8V 4.8V 4.8V 4.8V 4.8V 5V
C1223 1500P
C1225 1500P
C1136 6.3V1000
C1135 0.1
C1137 6.3V1000
C1138 0.1
C1224 0.01
C1144 6.3V470
C1143 0.1
C1145 6.3V470
C1146 0.1
IC1113
TC7WU04FT12L
INVERTER
IC1112
TC7W74FTE12L
D-FF
C1178 180P
GND Q D CK Q CLR PR Vcc
2.4V 2.4V 1.5V 2.4V 2.4V 2.4V
2.5V 2.5V 2.5V 4.8V 2.6V 4.8V 4.8V 4.8V
(4.8V)
C1220 82P
R1131 10M
R1132 1.2K
X1101 (22.5MHz)
C1131 33P
C1132 12P
C1179 180P
R1176 1.5K
C1219 180P
L1135 1.2μH
C1218 1000P
R1188 1K
C1139 0.1
C1140 6.3V470
C1214 100P
C1213 100P
C1212 100P
C1226 100P
C1211 100P
L1128 1.8μH
L1133 1.8μH
L1132 1.8μH
L1131 1.8μH
L1130 1.8μH
L1127 1.8μH
L1129 1.8μH
F A B C D G E
L1124 1.8μH
L1122 1.8μH
L1121 1.8μH
L1119 1.8μH
L1118 1.8μH
L1116 1.8μH
Z1124
Z1125
Z1126
CN1103
JW1102
DSPACK CK1 DT1 DSPCD DSPCS2 DSPCS1 DSPRST
SROUT GND SLOUT SWOUT GND C OUT Rch OUT GND Lch OUT
To B FL PANEL CIRCUIT(JW1103) on page 53
To L IN/OUT TERMINAL CIRCUIT(CN1102A) on page 43

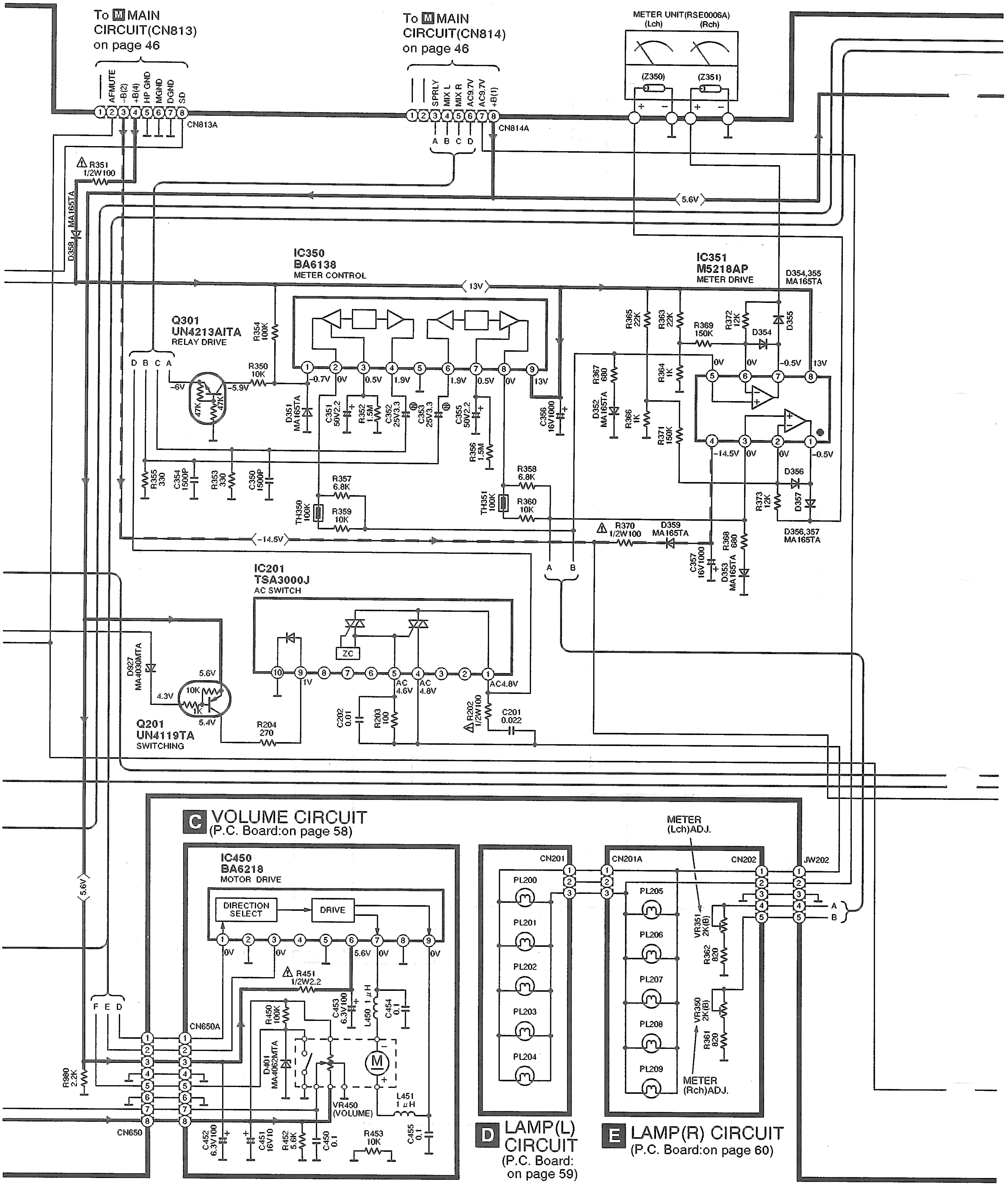
- ⇨ : FM signal
- ➡ : AM signal
- ▨⇨ : Surround speaker drive signal (Lch)
- ⇨ : Center speaker drive signal
- ⇨ : Subwoofer speaker drive signal

I DIGITAL CIRCUIT (P.C.Board:on page 62)

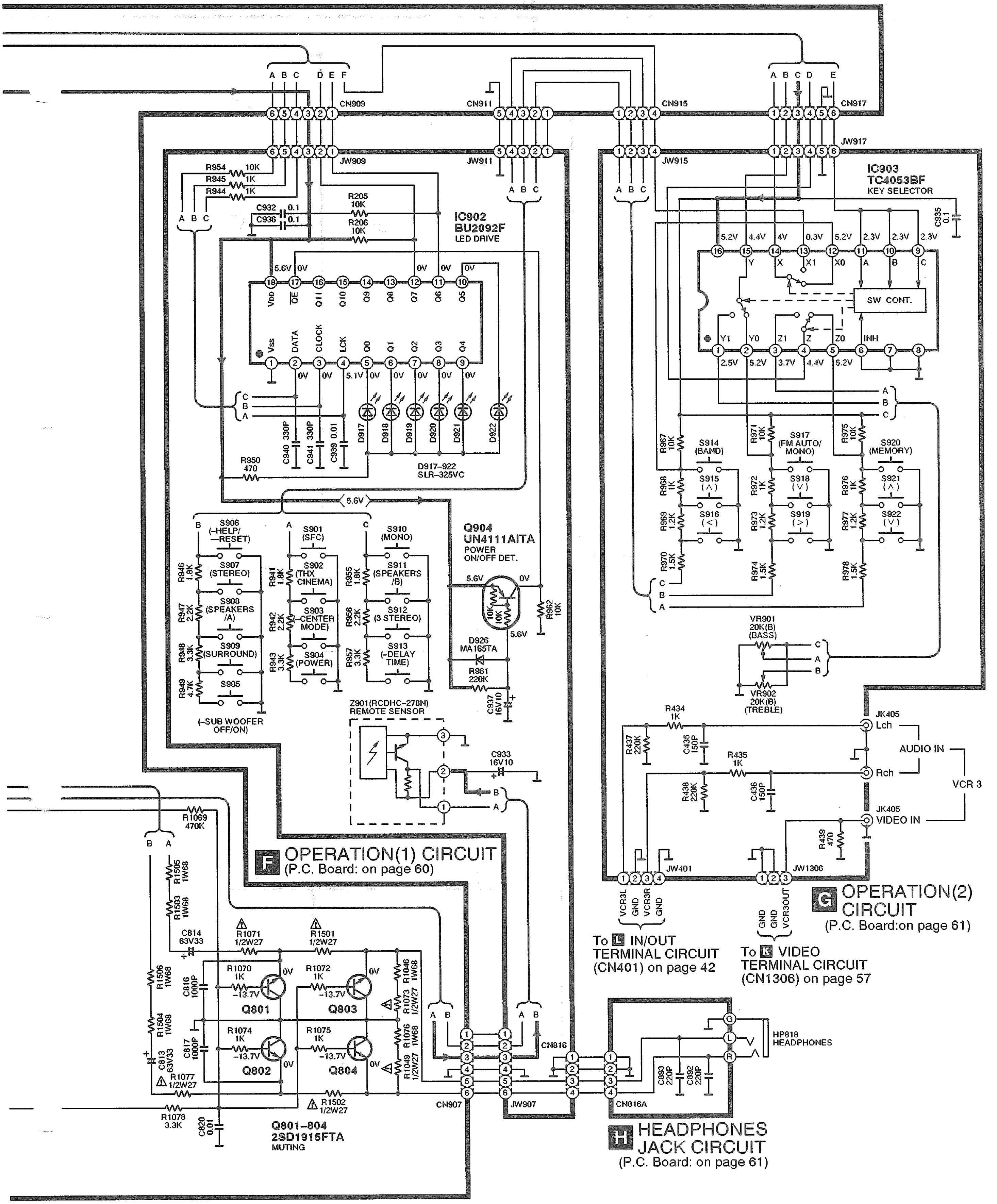

IC1106-1108
AK4320-VM
D/A CONVERTER
IC1106
IC1107
IC1108
Terminal guide:on page 69
ZMUTE
DZF
VREF
AVss
AVDD
VCOM
AOUTL
AOUTR
VCONT
DIFI
DIFO
DEMI
CKS
DVDD
DVss
XTO
XTI
PD
BICK
SDATA
LRCK
SMUTE
HOLD
DEMO
L1110 1.2μH
L1107 1.2μH
L1111 1.2μH
L1108 1.2μH
L1112 1.2μH
L1109 1.2μH
R1173 10
R1174 10
R1175 10
C1169 0.1
C1172 6.3V100
C1175 0.1
C1196 0.1
C1193 16V10
C1170 0.1
C1173 6.3V100
C1176 0.1
C1197 0.1
C1194 16V10
C1171 0.1
C1174 6.3V100
C1177 0.1
C1198 0.1
C1195 16V10
C1187 100P
C1188 100P
C1189 100P
R1179 1K
R1182 1K
R1185 1K
R1180 1K
R1183 1K
R1186 1K
R1181 1K
R1184 1K
R1187 1K
C1181 16V10
C1184 0.1
C1182 16V10
C1185 0.1
C1183 16V10
C1186 0.1
C1190 180P
4.8V
2.3V
4.7V
2V
5V
2.2V
1.7V
0V
IC1109(1/2)
IC1109
NJM2115MTE1
L.P.F
R1151 8.2K
C1117 0.1
C1157 1500P
R1163 10K
R1157 10K
C1151 680P
C1163 100P
C1158 1500P
R1152 8.2K
R1158 10K
R1164 10K
C1152 680P
C1164 100P
IC1110(1/2)
IC1110
NJM2115MTE1
L.P.F
R1153 8.2K
C1118 0.1
C1159 1500P
R1165 10K
R1159 10K
C1153 680P
C1165 100P
C1204 16V10
R1169 100K
C1160 1500P
R1154 10K
R1160 10K
R1166 10K
C1154 680P
C1166 100P
C1205 16V10
R1170 100K
IC1111(1/2)
IC1111
NJM2115MTE1
L.P.F
R1155 8.2K
C1119 0.1
C1161 6800P
R1167 8.2K
R1161 8.2K
C1155 2700P
C1167 560P
C1206 50V3.3
R1171 100K
C1162 6800P
R1156 8.2K
R1162 8.2K
R1168 8.2K
C1156 2700P
C1168 560P
C1207 50V3.3
R1172 100K
A
B
C
D
E
F

B FL PANEL CIRCUIT (P.C. Board:on page 59)


To M MAIN CIRCUIT(CN809) on page 43
To M MAIN CIRCUIT(CN810) on page 43
To M MAIN CIRCUIT(CN811) on page 43
DT1 STOSD EXDET VMUTE SSEL STTC STVR ST91
CN809A
DT1 CE DT2 CK2 PRELAY OVLD IFDATA CK1
CN810A
CK1 -B(1) AC2.6V AC2.6V +B(2) HP Lch HP Rch FMST
CN811A
FL901(RSL 0224-F)
FL DISPLAY
R981 8.2K
R927 4.7K
R982 4.7K
R983 4.7K
R953 1K
R984 8.2K
R952 1K
R964 100K
R965 100K
R966 100K
C908 100V10
R930 100
R916 100
D903 MA4056MTA
C911 35V10
C914 35V10
C909 100V10
C910 0.01
C924 330P
C925 330P
C926 330P
C927 330P
C928 330P
C929 330P
C930 330P
C907 100P
R907 1K
6.1V
D928 MA165TA
R912 47K
R908 1K
R910 100K
Q906 UN4216TA SWITCHING
Q905 UN4211AITA SWITCHING
4.7K 10K 10K
5.2V 0V
C906 100P
C905 0.01
C902 100P
C903 100P
C938 100P
R917 5.6K
R915 100K
R918 1K
R919 1K
R920 1K
R921 1K
R922 1K
R923 100
R924 1K
R925 100
R926 1K
R928 1K
R929 1K
IC901 LC8A028B5A53 MICROCOMPUTER
Terminal guide: on page 68
INIT FMST SD IFIN DSPCS1 DSPCS2 DSPCD CE DT1 OVLD CK1 DT2 STOSD CK2 EXDET ADSEL
STVR STTC DSPRST S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 VPP VDD
S12 S13 DG7 DG6 DG5 DG4 DG3 DG2 DG1 LIGHT AFMUTE PRELAY ST91 VMUTE SSEL STLED
TEST RES XT1 XT2 VSS CF1 CF2 VDD AD1 AD2 AD3 AD4 STANDBY DSPACK NC REM
-14.9V -18.6V -22.5V -1V -7.1V -14.8V -13.3V -12V -22.4V -22.4V -22.8V 5.1V
-22.4V -18.9V -18.8V -17.4V -17.6V -18.8V -18.5V -18.5V -18.4V 2.1V -13.7V
5V 0V -23V T=2ms.
6V P-P F=6MHz
4.5V P-P F=6MHz
C931 6.3V100
C923 100P
R906 10K
R911 100K
R909 100K
R914 100K
C904 0.01
C901 100P
R937 10K
R940 100K
R939 100K
R938 100K
R951 4.7K
Q908,909 UN4213AITA SWITCHING
L901 1.8 μH
D901 MA165TA
C915 0.01
CF901 (6MHz)
R934 1K
C919 0.01
C920 6.3V100
C916 0.01
C917 6.3V1000
R936 680
C922 6.3V470
Q902
R931 270
R933 100K
D914 1SS291TA
L902 100μH
D915 1SS291TA
R979 1K
Q907 Q908 Q909 Q910
47K 47K
5.2V 5.1V 0V
C912 100P
Q907,910 UN4113AITA SWITCHING
R932 120
D904 MA4039MTA
C913 0.01
Q903
10K 47K
C918 50V1
D913 MA165TA
R935 4.7K
C921 50V1
C934 0.01
D923 MA4062MTA
R987 1K
JW1103
5.2V
DSPRST DSPCS1 DSPCS2 DSPCD DT1 CK1 DSPACK
To I DIGITAL CIRCUIT(CN1103) on page 51
Q902 2SA1309AQSTA REGULATOR
Q903 UN4214AITA RESET
D902 MA165TA

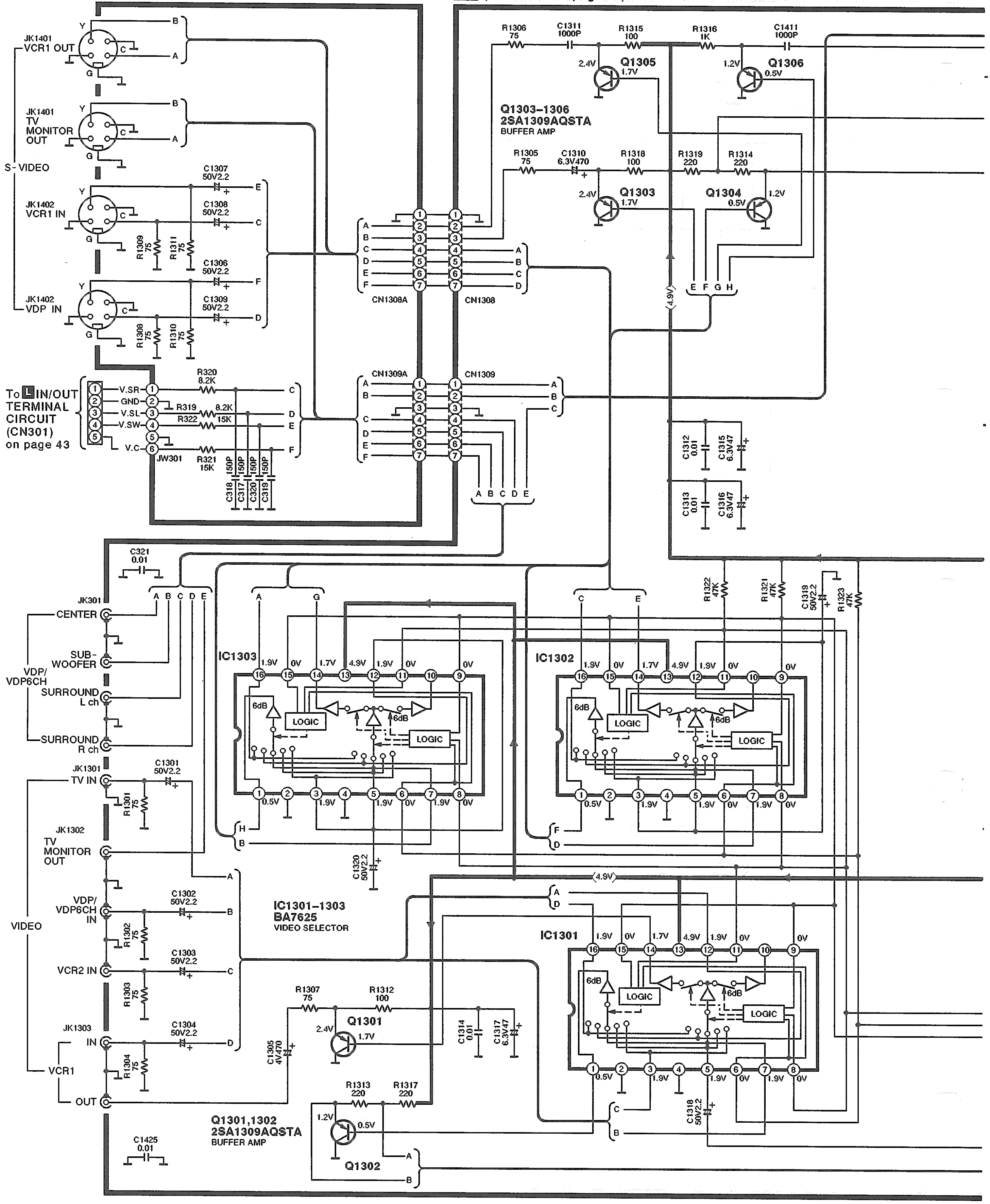

To M MAIN CIRCUIT(CN813) on page 46
AFMUTE
-B(2)
+B(4)
HP GND
MGND
DGND
SD
CN813A
To M MAIN CIRCUIT(CN814) on page 46
SPRLY
MIX L
MIX R
AC9.7V
AC9.7V
+B(1)
CN814A
A B C D
METER UNIT(RSE0006A)
(Lch)
(Rch)
(Z350)
(Z351)
R351 1/2W100
D358 MA165TA
5.6V
IC350
BA6138
METER CONTROL
13V
IC351
M5218AP
METER DRIVE
D354,355 MA165TA
Q301
UN4213AITA
RELAY DRIVE
R354 100K
R350 10K
-6V
-5.9V
47K
47K
-0.7V
0V
0.5V
1.9V
1.9V
0.5V
0V
13V
D351 MA165TA
C351 50V2.2
R352 1.5M
C352 25V3.3
C353 25V3.3
C355 50V2.2
R356 1.5M
C356 16V1000
R365 22K
R363 22K
R369 150K
R372 12K
D354
D355
0V
0V
-0.5V
13V
R367 680
R364 1K
D352 MA165TA
R366 1K
R371 150K
-14.5V
0V
0V
-0.5V
D356
R373 12K
D357
D356,357 MA165TA
R355 330
C354 1500P
R353 330
C350 1500P
R357 6.8K
TH350 100K
R359 10K
R358 6.8K
TH351 100K
R360 10K
R370 1/2W100
D359 MA165TA
R368 680
C357 16V1000
D353 MA165TA
-14.5V
A B
IC201
TSA3000J
AC SWITCH
ZC
1V
AC 4.6V
AC 4.8V
AC4.8V
D927 MA4030MTA
5.6V
4.3V
10K
47K
1K
5.4V
Q201
UN4119TA
SWITCHING
R204 270
C202 0.01
R203 100
R202 1/2W100
C201 0.022
C VOLUME CIRCUIT (P.C. Board:on page 58)
IC450
BA6218
MOTOR DRIVE
DIRECTION SELECT
DRIVE
0V
0V
5.6V
0V
0V
R451 1/2W2.2
R450 100K
C453 6.3V100
L450 1 μH
C454 0.1
D401 MA4062MTA
M
VR450 (VOLUME)
L451 1 μH
F E D
CN650A
CN650
5.6V
R980 2.2K
C452 6.3V100
C451 16V10
R452 5.6K
C450 0.1
R453 10K
C455 0.1
CN201
PL200
PL201
PL202
PL203
PL204
D LAMP(L) CIRCUIT (P.C. Board: on page 59)
CN201A
CN202
PL205
PL206
PL207
PL208
PL209
METER (Lch)ADJ.
VR351 2K(B)
R362 820
VR350 2K(B)
R361 820
METER (Rch)ADJ.
JW202
A
B
E LAMP(R) CIRCUIT (P.C. Board:on page 60)

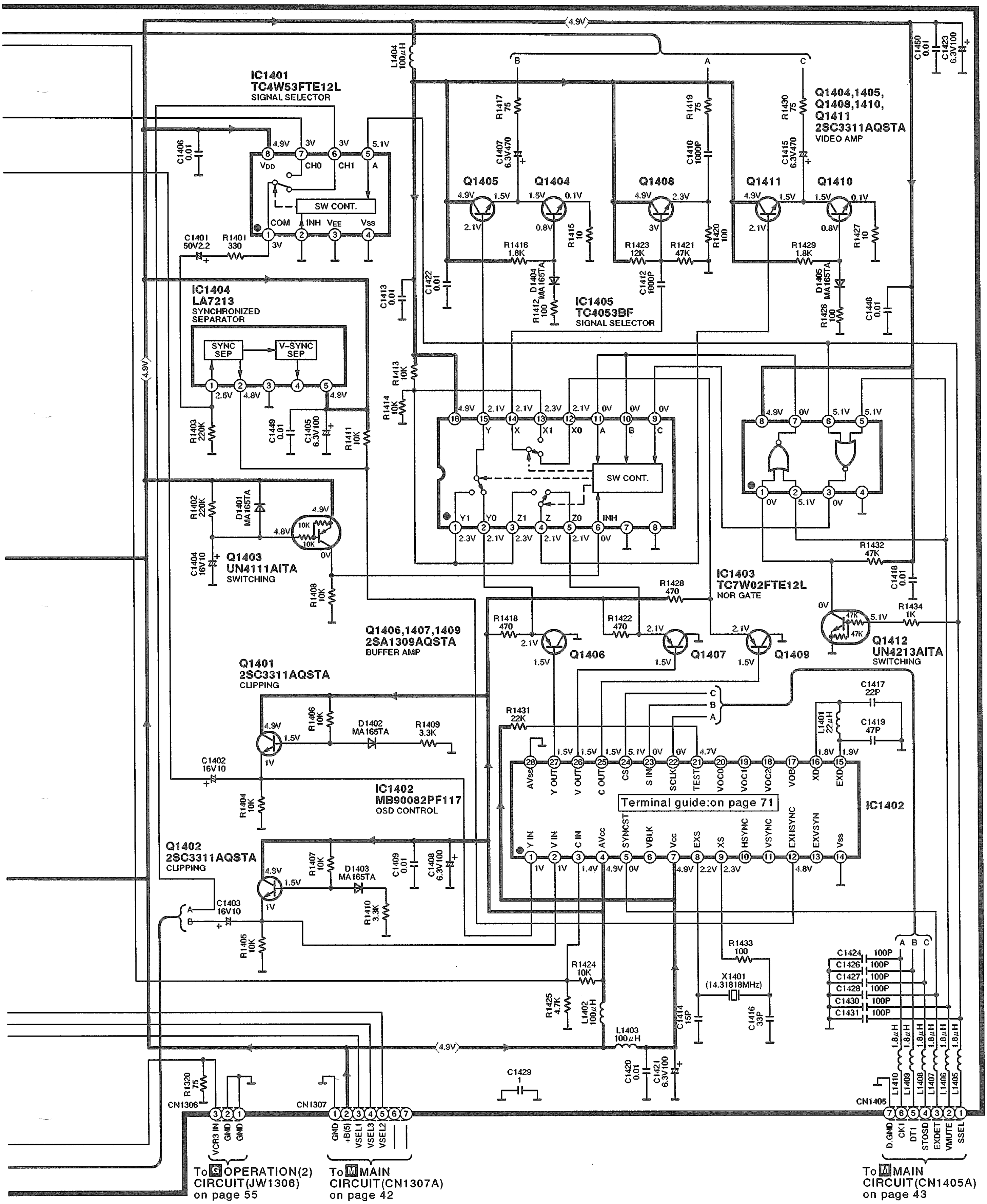
B FL PANEL CIRCUIT (P.C. Board: on page 59)


CN909
JW909
CN911
JW911
CN915
JW915
CN917
JW917
R954 10K
R945 1K
R944 1K
C932 0.1
C936 0.1
R205 10K
R206 10K
IC902
BU2092F
LED DRIVE
VDD
OE
Q11
Q10
Q9
Q8
Q7
Q6
Q5
Vss
DATA
CLOCK
LCK
Q0
Q1
Q2
Q3
Q4
5.6V
0V
5.1V
C940 330P
C941 330P
C939 0.01
D917
D918
D919
D920
D921
D922
D917–922
SLR-325VC
R950 470
IC903
TC4053BF
KEY SELECTOR
C935 0.1
5.2V
4.4V
4V
0.3V
2.3V
SW CONT.
INH
2.5V
3.7V
R967 10K
S914 (BAND)
R971 10K
S917 (FM AUTO/ MONO)
R975 10K
S920 (MEMORY)
R968 1K
S915 (∧)
R972 1K
S918 (∨)
R976 1K
S921 (∧)
R969 1.2K
S916 (<)
R973 1.2K
S919 (>)
R977 1.2K
S922 (∨)
R970 1.5K
R974 1.5K
R978 1.5K
S906 (–HELP/ –RESET)
S901 (SFC)
S910 (MONO)
S907 (STEREO)
S902 (THX CINEMA)
S911 (SPEAKERS /B)
S908 (SPEAKERS /A)
S903 (–CENTER MODE)
S912 (3 STEREO)
S909 (SURROUND)
S904 (POWER)
S913 (–DELAY TIME)
S905
(–SUB WOOFER OFF/ON)
R946 1.8K
R947 2.2K
R948 3.3K
R949 4.7K
R941 1.8K
R942 2.2K
R943 3.3K
R955 1.8K
R956 2.2K
R957 3.3K
Q904
UN4111AITA
POWER ON/OFF DET.
R862 10K
D926
MA165TA
R961 220K
C937 16V10
Z901(RCDHC-278N)
REMOTE SENSOR
C933 16V10
VR901 20K(B) (BASS)
VR902 20K(B) (TREBLE)
R434 1K
R435 1K
R437 220K
C435 150P
R438 220K
C436 150P
JK405
Lch
Rch
AUDIO IN
VCR 3
VIDEO IN
R439 470
JW401
JW1306
VCR3L
GND
VCR3R
VCR3OUT
To L IN/OUT TERMINAL CIRCUIT (CN401) on page 42
To K VIDEO TERMINAL CIRCUIT (CN1306) on page 57
G OPERATION(2) CIRCUIT (P.C. Board:on page 61)
F OPERATION(1) CIRCUIT (P.C. Board: on page 60)
R1069 470K
R1505 1W68
R1503 1W68
C814 63V33
R1071 1/2W27
R1501 1/2W27
R1070 1K
R1072 1K
–13.7V
Q801
Q803
Q802
Q804
R1074 1K
R1075 1K
R1046 1W68
R1073 1/2W27
R1076 1W68
R1049 1/2W27
C816 1000P
C817 1000P
R1506 1W68
R1504 1W68
C813 63V33
R1077 1/2W27
R1502 1/2W27
R1078 3.3K
C820 0.01
Q801–804
2SD1915FTA
MUTING
CN907
JW907
CN816
CN816A
C893 220P
C892 220P
HP818 HEADPHONES
H HEADPHONES JACK CIRCUIT (P.C. Board: on page 61)

J S-VIDEO JACK CIRCUIT
(P.C.Board:on page 63)

K VIDEO TERMINAL CIRCUIT
(P.C.Board:on page 63)

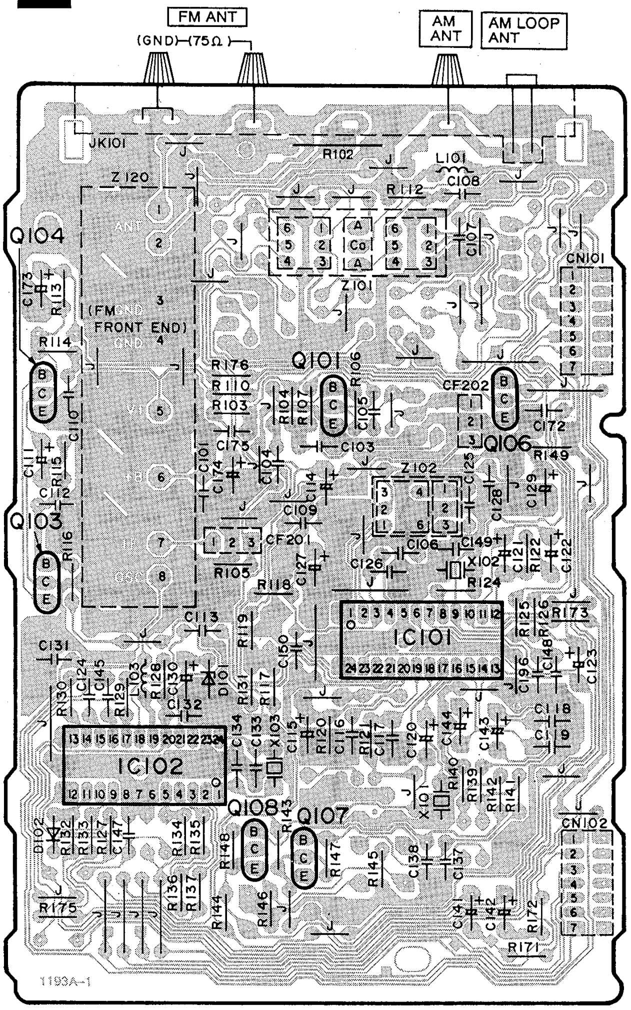

JK1401 VCR1 OUT
JK1401 TV MONITOR OUT
S-VIDEO
JK1402 VCR1 IN
JK1402 VDP IN
Y
C
G
A
B
C
D
E
F
C1307 50V2.2
C1308 50V2.2
C1306 50V2.2
C1309 50V2.2
R1309 75
R1311 75
R1308 75
R1310 75
To L IN/OUT TERMINAL CIRCUIT (CN301) on page 43
V.SR
GND
V.SL
V.SW
V.C
JW301
R320 8.2K
R319 8.2K
R322 15K
R321 15K
C318 150P
C317 150P
C320 150P
C319 150P
CN1308A
CN1308
CN1309A
CN1309
R1306 75
C1311 1000P
R1315 100
R1316 1K
C1411 1000P
Q1305
Q1306
2.4V
1.7V
1.2V
0.5V
Q1303–1306 2SA1309AQSTA BUFFER AMP
R1305 75
C1310 6.3V470
R1318 100
R1319 220
R1314 220
Q1303
Q1304
(4.9V)
E F G H
C1312 0.01
C1315 6.3V47
C1313 0.01
C1316 6.3V47
R1322 47K
R1321 47K
C1319 50V2.2
R1323 47K
C321 0.01
JK301
CENTER
SUB-WOOFER
VDP/ VDP6CH
SURROUND L ch
SURROUND R ch
IC1303
IC1302
IC1301
1.9V
0V
1.7V
4.9V
6dB
LOGIC
0.5V
JK1301 TV IN
C1301 50V2.2
R1301 75
JK1302 TV MONITOR OUT
VDP/ VDP6CH IN
C1302 50V2.2
R1302 75
VIDEO
VCR2 IN
C1303 50V2.2
R1303 75
JK1303 IN
C1304 50V2.2
R1304 75
VCR1
OUT
C1320 50V2.2
IC1301–1303 BA7625 VIDEO SELECTOR
R1307 75
R1312 100
Q1301
C1305 4V470
C1314 0.01
C1317 6.3V47
R1313 220
R1317 220
Q1301,1302 2SA1309AQSTA BUFFER AMP
Q1302
C1318 50V2.2
C1425 0.01


IC1401
TC4W53FTE12L
SIGNAL SELECTOR
VDD
CH0
CH1
A
SW CONT.
COM
INH
VEE
Vss
C1406 0.01
C1401 50V2.2
R1401 330
IC1404
LA7213
SYNCHRONIZED SEPARATOR
SYNC SEP
V-SYNC SEP
R1403 220K
C1449 0.01
C1405 6.3V100
R1411 10K
(4.9V)
R1402 220K
D1401 MA165TA
C1404 16V10
Q1403
UN4111AITA
SWITCHING
10K
R1408 10K
Q1401
2SC3311AQSTA
CLIPPING
R1406 10K
D1402 MA165TA
R1409 3.3K
C1402 16V10
R1404 10K
IC1402
MB90082PF117
OSD CONTROL
Q1402
2SC3311AQSTA
CLIPPING
R1407 10K
D1403 MA165TA
C1409 0.01
C1408 6.3V100
R1410 3.3K
C1403 16V10
R1405 10K
L1404 100μH
C1413 0.01
R1413 10K
R1414 10K
R1417 75
C1407 6.3V470
Q1405
Q1404
R1416 1.8K
R1415 10
D1404 MA165TA
R1412 100
C1422 0.01
IC1405
TC4053BF
SIGNAL SELECTOR
R1419 75
C1410 1000P
Q1408
R1423 12K
R1421 47K
R1420 100
C1412 1000P
R1430 75
C1415 6.3V470
Q1404,1405,
Q1408,1410,
Q1411
2SC3311AQSTA
VIDEO AMP
Q1411
Q1410
R1429 1.8K
R1427 10
D1405 MA165TA
R1426 100
C1448 0.01
C1450 0.01
C1423 6.3V100
Y
X
X1
X0
A
B
C
SW CONT.
Y1
Y0
Z1
Z
Z0
INH
IC1403
TC7W02FTE12L
NOR GATE
R1432 47K
C1418 0.01
R1434 1K
Q1412
UN4213AITA
SWITCHING
47K
R1428 470
R1418 470
R1422 470
Q1406
Q1407
Q1409
Q1406,1407,1409
2SA1309AQSTA
BUFFER AMP
R1431 22K
C1417 22P
L1401 22μH
C1419 47P
AVss
Y OUT
V OUT
C OUT
CS
S IN
SCLK
TEST
VOC0
VOC1
VOC2
VOB
XD
EXD
Terminal guide:on page 71
IC1402
Y IN
V IN
C IN
AVcc
SYNCST
VBLK
Vcc
EXS
XS
HSYNC
VSYNC
EXHSYNC
EXVSYN
Vss
R1433 100
X1401 (14.31818MHz)
C1414 15P
C1416 33P
R1424 10K
R1425 4.7K
L1402 100μH
L1403 100μH
C1429 1
C1420 0.01
C1421 6.3V100
C1424 100P
C1426 100P
C1427 100P
C1428 100P
C1430 100P
C1431 100P
L1410 1.8μH
L1409 1.8μH
L1408 1.8μH
L1407 1.8μH
L1406 1.8μH
L1405 1.8μH
R1320 75
CN1306
VCR3 IN
GND
GND
CN1307
GND
+B(5)
VSEL1
VSEL3
VSEL2
CN1405
D.GND
CK1
DT1
STOSD
EXDET
VMUTE
SSEL
To G OPERATION(2) CIRCUIT(JW1306) on page 55
To M MAIN CIRCUIT(CN1307A) on page 42
To M MAIN CIRCUIT(CN1405A) on page 43

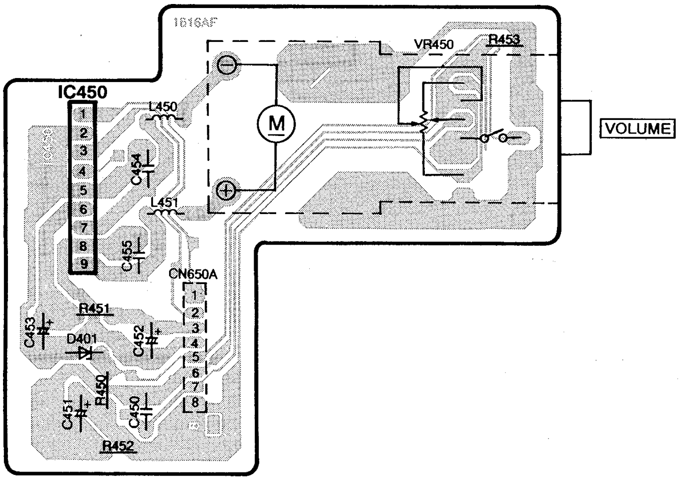
■PRINTED CIRCUIT BOARD DIAGRAM

- This printed circuit board diagram may be modified at any time with the development of new technology.

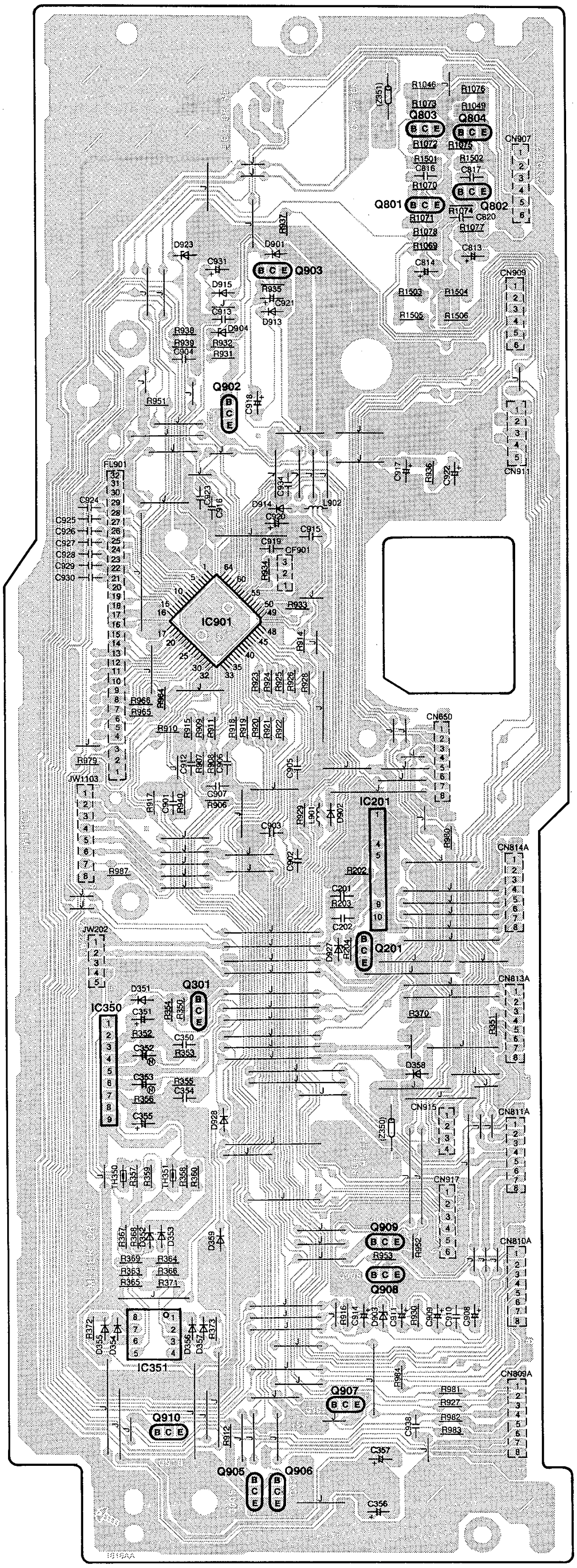
A TUNER P.C.B. (REP1750D–T)


FM ANT
(GND)
(75Ω)
AM ANT
AM LOOP ANT
JK101
Z120
ANT
(FM FRONT END)
Q104
Q103
Q101
Q106
Q107
Q108
Z101
Z102
CF201
CF202
L101
L103
IC101
IC102
CN101
CN102
X101
X102
X103
D101
D102
1193A-1

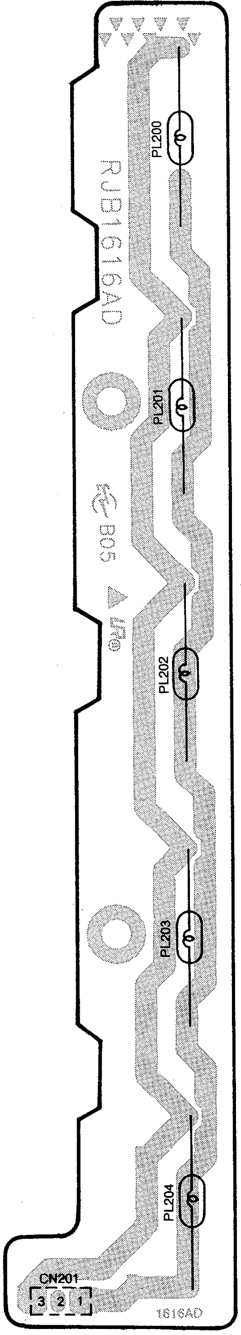
C VOLUME P.C.B. (REP2277A–S)


1616AF
IC450
L450
L451
C454
C455
VR450
R453
M
VOLUME
CN650A
R451
C453
D401
C452
R450
C451
C450
R452

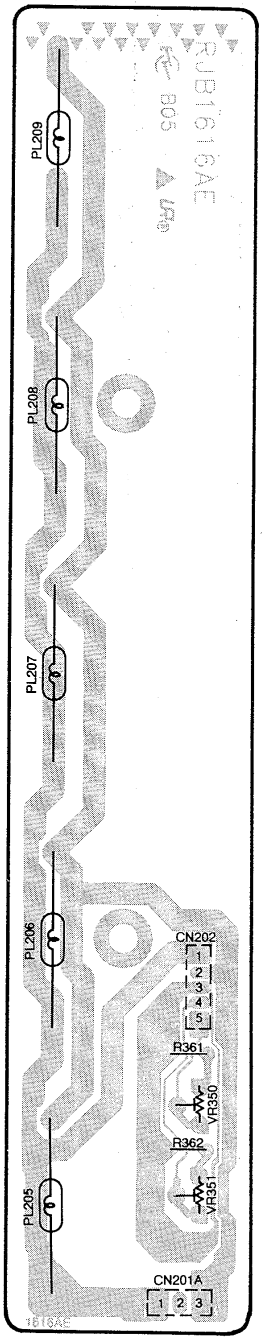
B FL PANEL P.C.B. (REP2277A–S)


IC901
IC201
IC350
IC351
Q801
Q802
Q803
Q804
Q902
Q903
Q201
Q301
Q905
Q906
Q907
Q908
Q909
Q910
FL901
CN907
CN909
CN911
CN650
CN814A
CN813A
CN811A
CN810A
CN809A
CN915
CN917
JW1103
JW202
CF901
L902
1616AA

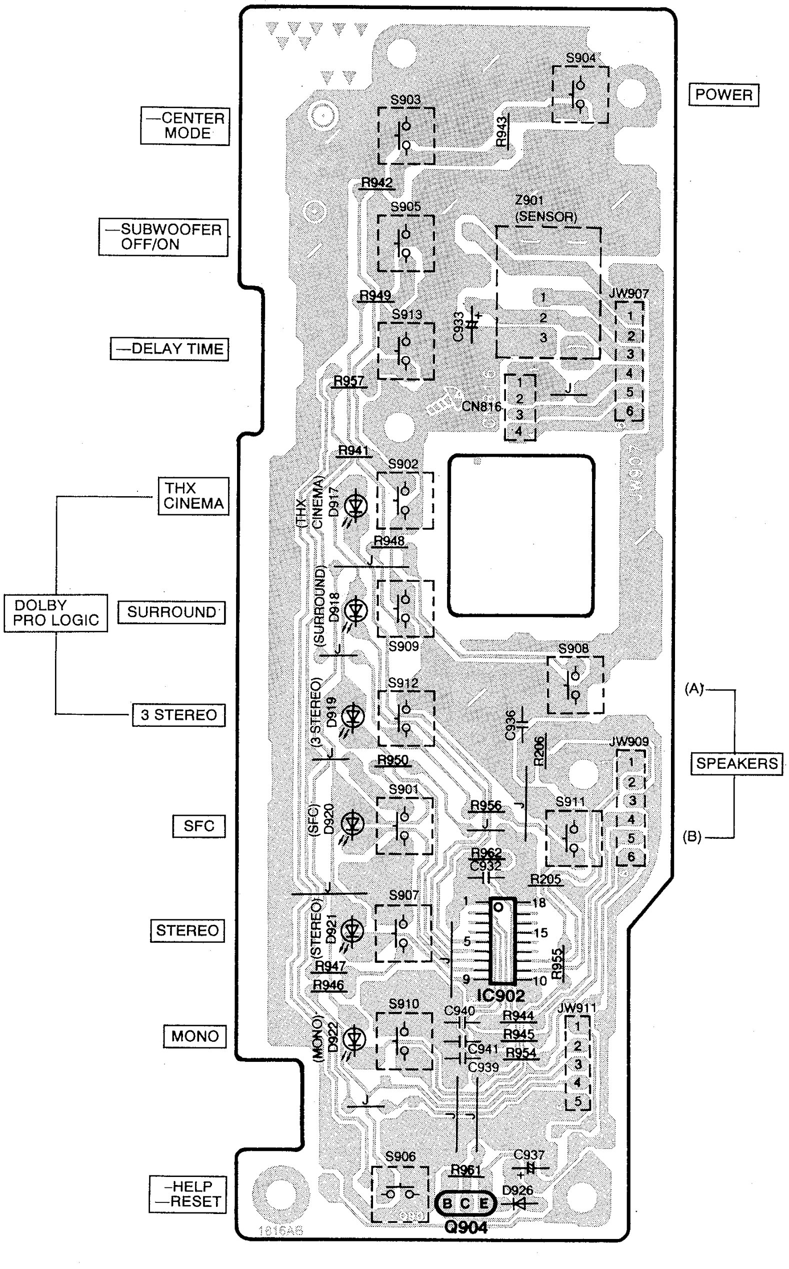
D LAMP (L) P.C.B. (REP2277A–S)


RJB1616AD
PL200
PL201
PL202
PL203
PL204
B05
CN201
3 2 1
1616AD

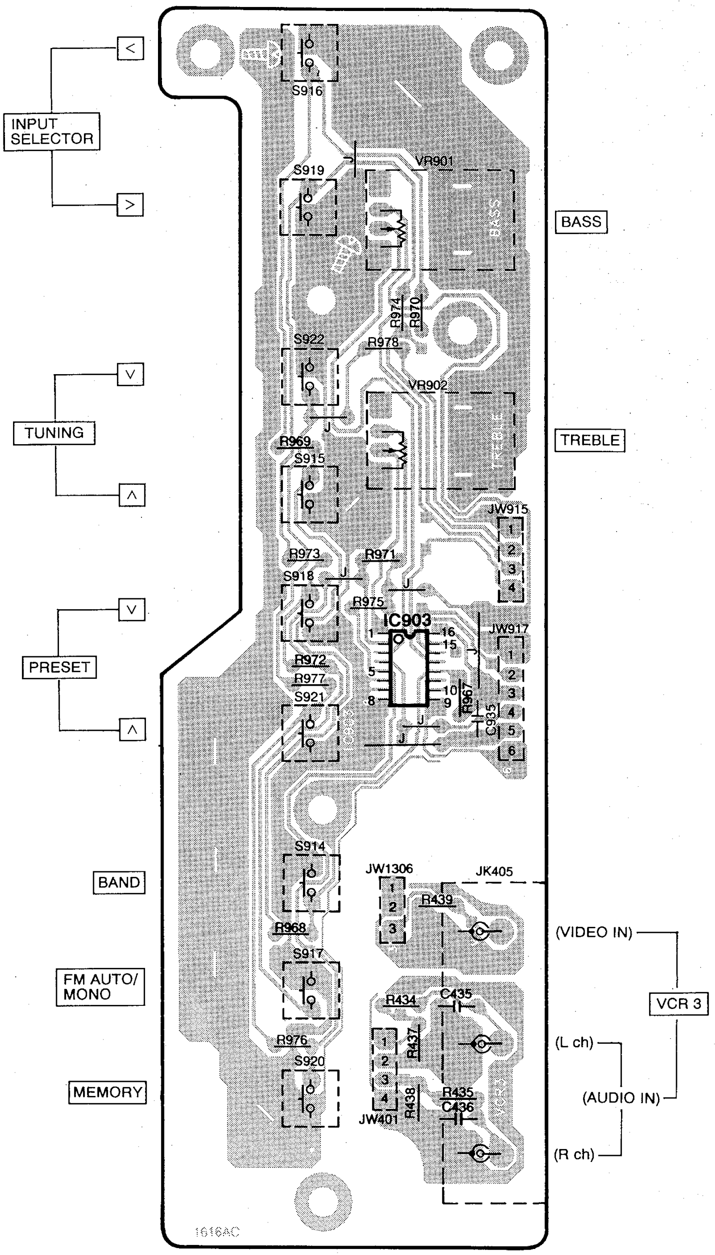
E LAMP (R) P.C.B. (REP2277A–S)


RJB1616AE
B05
PL209
PL208
PL207
PL206
PL205
CN202
1
2
3
4
5
R361
VR350
R362
VR351
CN201A
1 2 3
1616AE

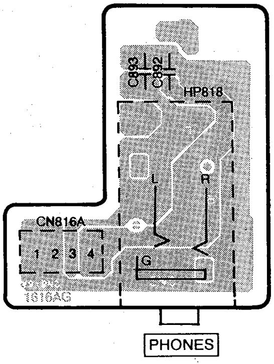
F OPERATION (1) P.C.B. (REP2277A–S)


POWER
—CENTER MODE
—SUBWOOFER OFF/ON
—DELAY TIME
THX CINEMA
DOLBY PRO LOGIC
SURROUND
3 STEREO
SFC
STEREO
MONO
—HELP —RESET
(A)
SPEAKERS
(B)
S904
S903
R943
R942
S905
Z901 (SENSOR)
1
2
3
R949
S913
C933
JW907
1 2 3 4 5 6
R957
CN816
1 2 3 4
J
R941
S902
(THX CINEMA)
D917
R948
(SURROUND)
D918
S909
S908
S912
(3 STEREO)
D919
C936
R206
JW909
1 2 3 4 5 6
R950
S901
(SFC)
D920
R956
S911
R962
C932
R205
S907
(STEREO)
D921
1
5
9
18
15
10
IC902
R955
R947
R946
S910
C940
R944
R945
R954
C941
C939
JW911
1 2 3 4 5
(MONO)
D922
S906
R961
C937
D926
B C E
Q904
1616AB

G OPERATION (2) P.C.B.
(REP2277A–S)


INPUT SELECTOR
<
>
TUNING
V
Λ
PRESET
V
Λ
BAND
FM AUTO/ MONO
MEMORY
S916
S919
VR901
BASS
R974
R970
S922
R978
VR902
TREBLE
R969
S915
JW915
R973
R971
S918
R975
IC903
JW917
R972
R977
S921
R967
C935
S914
JW1306
JK405
R439
R968
S917
R434
C435
R437
R976
S920
JW401
R438
R435
C436
(VIDEO IN)
VCR 3
(L ch)
(AUDIO IN)
(R ch)
1616AC

H HEADPHONES JACK P.C.B.
(REP2277A–S)


C893
C892
HP818
CN816A
1 2 3 4
L
R
G
1616AG
PHONES

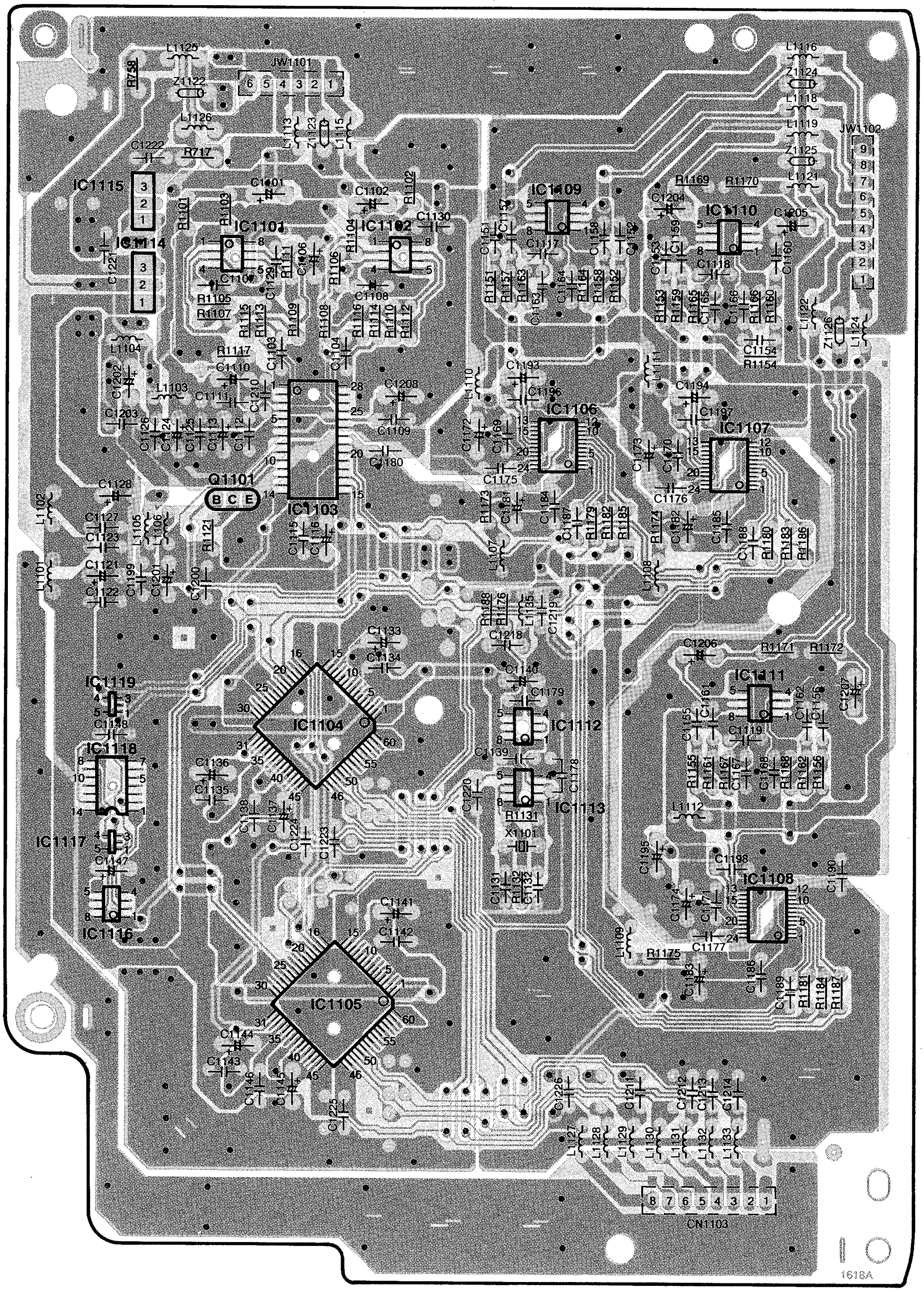
1 2 3 4 5

A

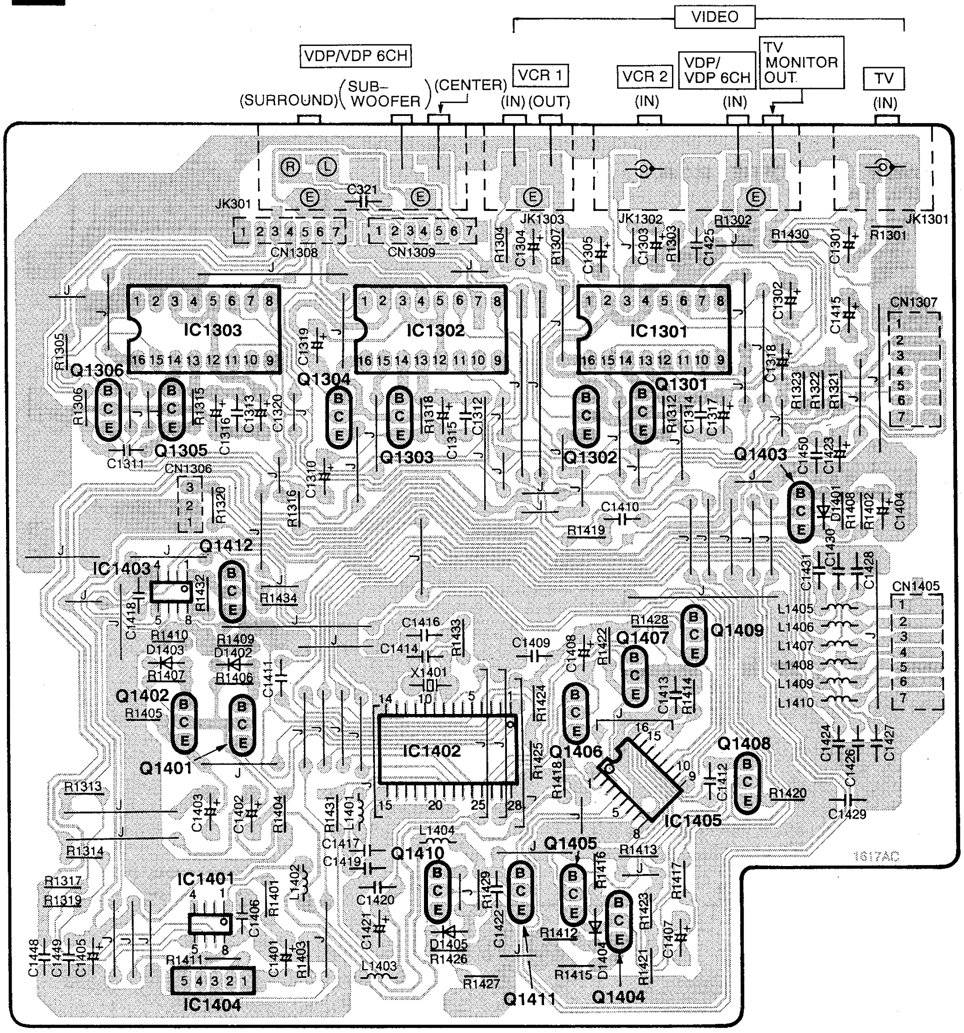
Notes:

- In this printed circuit board diagram, the parts and foil patterns on the board facing toward you are printed in black.
- The "●" mark denotes the connection points of double-faced foil patterns (through holes) on both sides of the printed circuit board.

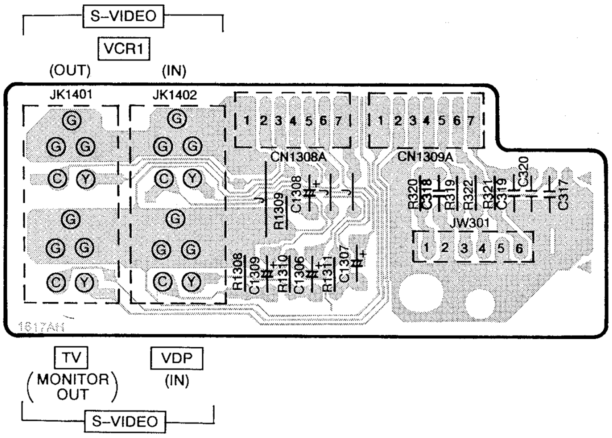
I DIGITAL P.C.B. (REP2279A–T)


B
C
D
E
F
L1125
JW1101
6 5 4 3 2 1
R738
Z1122
L1126
L1113
Z1123
L1115
C1222
R717
IC1115
3 2 1
C1101
C1102
R1102
R1101
R1103
IC1101
IC1102
C1130
R1104
IC1114
C1221
C1107
C1106
R1106
C1108
R1105
R1107
R1115
R1113
R1109
R1108
R1116
R1114
R1110
R1112
R1111
L1104
R1117
C1110
C1103
C1104
C1202
L1103
C1111
C1210
C1208
C1203
C1109
C1180
C1126
IC1103
Q1101
B C E
C1128
L1102
C1127
C1123
L1105
L1106
R1121
C1121
C1199
C1201
C1200
C1122
L1101
IC1109
R1169
R1170
C1204
IC1110
C1205
C1117
C1118
R1151
R1157
R1163
R1164
R1158
R1152
R1153
R1159
R1165
R1166
R1160
C1154
R1154
L1116
Z1124
L1118
L1119
Z1125
L1121
JW1102
9 8 7 6 5 4 3 2 1
L1122
Z1126
L1124
L1110
C1193
C1196
C1172
C1169
IC1106
C1175
R1173
C1184
C1187
R1179
R1182
R1185
L1111
C1194
C1197
IC1107
C1173
C1170
C1176
R1174
C1188
R1180
R1183
R1186
L1107
L1108
R1138
R1176
C1218
C1133
C1134
IC1119
C1138
IC1118
IC1117
C1147
IC1116
IC1104
C1136
C1135
C1224
C1223
C1140
C1179
IC1112
C1139
C1178
C1220
IC1113
R1131
X1101
C1131
C1132
C1206
R1171
R1172
IC1111
C1207
C1155
C1161
C1119
C1162
C1156
R1155
R1161
R1167
C1167
C1168
R1168
R1162
R1156
L1112
C1195
C1198
IC1108
C1190
C1174
C1171
C1177
L1109
R1175
C1183
C1186
C1189
R1181
R1184
R1187
C1141
C1142
IC1105
C1144
C1143
C1146
C1145
C1225
C1226
C1211
C1212
C1213
C1214
L1127
L1128
L1129
L1130
L1131
L1132
L1133
8 7 6 5 4 3 2 1
CN1103
1618A

K VIDEO TERMINAL P.C.B. (REP2278A–P)


VIDEO
VDP/VDP 6CH
(SURROUND)
(SUB-WOOFER)
(CENTER)
VCR 1
(IN) (OUT)
VCR 2
(IN)
VDP/
VDP 6CH
(IN)
TV
MONITOR
OUT
TV
(IN)
JK301
JK1303
JK1302
JK1301
CN1308
CN1309
CN1307
CN1306
CN1405
IC1303
IC1302
IC1301
IC1403
IC1402
IC1401
IC1404
IC1405
Q1301
Q1302
Q1303
Q1304
Q1305
Q1306
Q1401
Q1402
Q1403
Q1404
Q1405
Q1406
Q1407
Q1408
Q1409
Q1410
Q1411
Q1412
X1401
L1401
L1402
L1403
L1404
L1405
L1406
L1407
L1408
L1409
L1410
D1401
D1402
D1403
D1404
D1405
1617AC

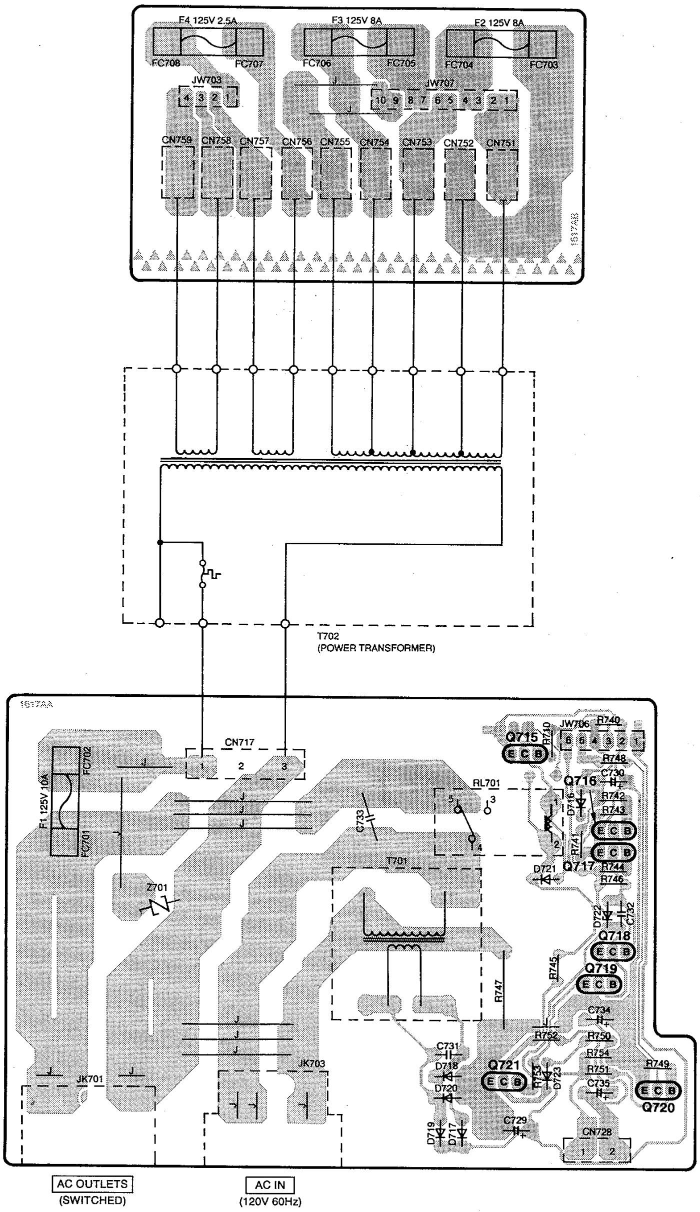
J S–VIDEO JACK P.C.B. (REP2278A–P)


S–VIDEO
VCR1
(OUT)
(IN)
JK1401
JK1402
CN1308A
CN1309A
JW301
C1306
C1307
C1308
C1309
R1308
R1309
R1310
R1311
R320
C318
R319
R322
C319
C320
C317
1617AH
TV
(MONITOR OUT)
VDP
(IN)
S–VIDEO

1 2 3 4 5

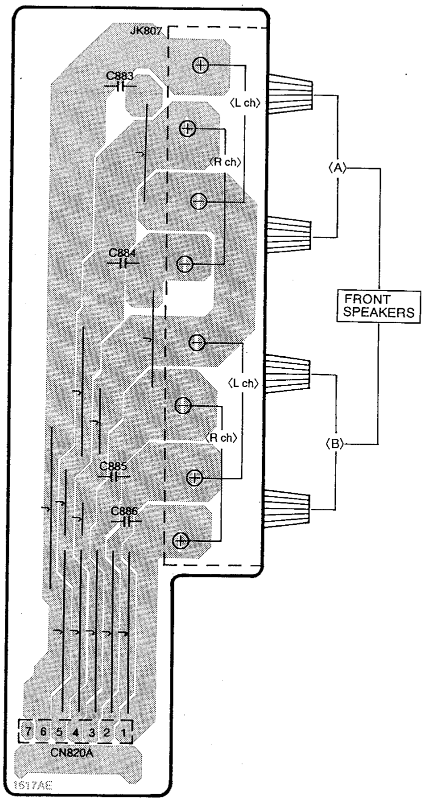
A B C D E F

P POWER TRANSFORMER P.C.B. (REP2278A–P)

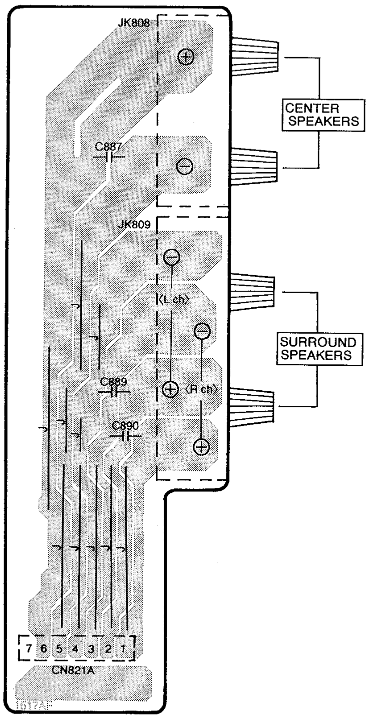

F4 125V 2.5A
F3 125V 8A
F2 125V 8A
FC708
FC707
FC706
FC705
FC704
FC703
JW703
JW707
CN759
CN758
CN757
CN756
CN755
CN754
CN753
CN752
CN751
1617AB
T702
(POWER TRANSFORMER)
1617AA
CN717
F1 125V 10A
FC702
FC701
Z701
Q715
JW706
R740
R748
C730
Q716
D716
R742
R743
RL701
C733
T701
R741
Q717
R744
D721
R746
D722
C732
Q718
R745
Q719
R747
C734
R750
R752
C731
D718
D720
Q721
R753
D723
R754
R751
R749
C735
Q720
D719
D717
C729
CN728
JK701
JK703
AC OUTLETS
(SWITCHED)
AC IN
(120V 60Hz)

N AC IN/OUT P.C.B. (REP2278A–P)

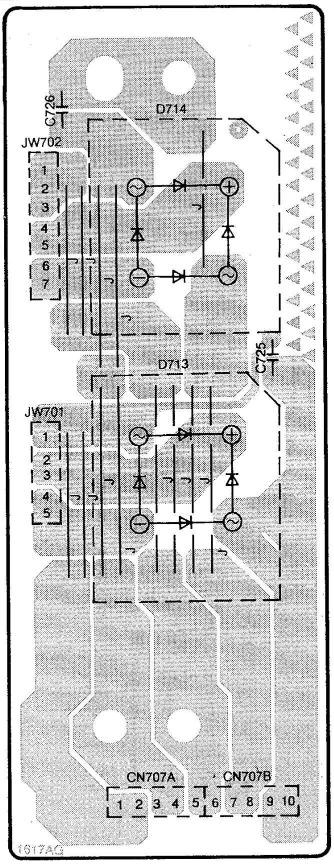
Q SPEAKERS TERMINAL (1) P.C.B. (REP2278A–P)


JK807
C883
C884
C885
C886
⟨L ch⟩
⟨R ch⟩
⟨A⟩
⟨B⟩
FRONT SPEAKERS
CN820A
1617AE

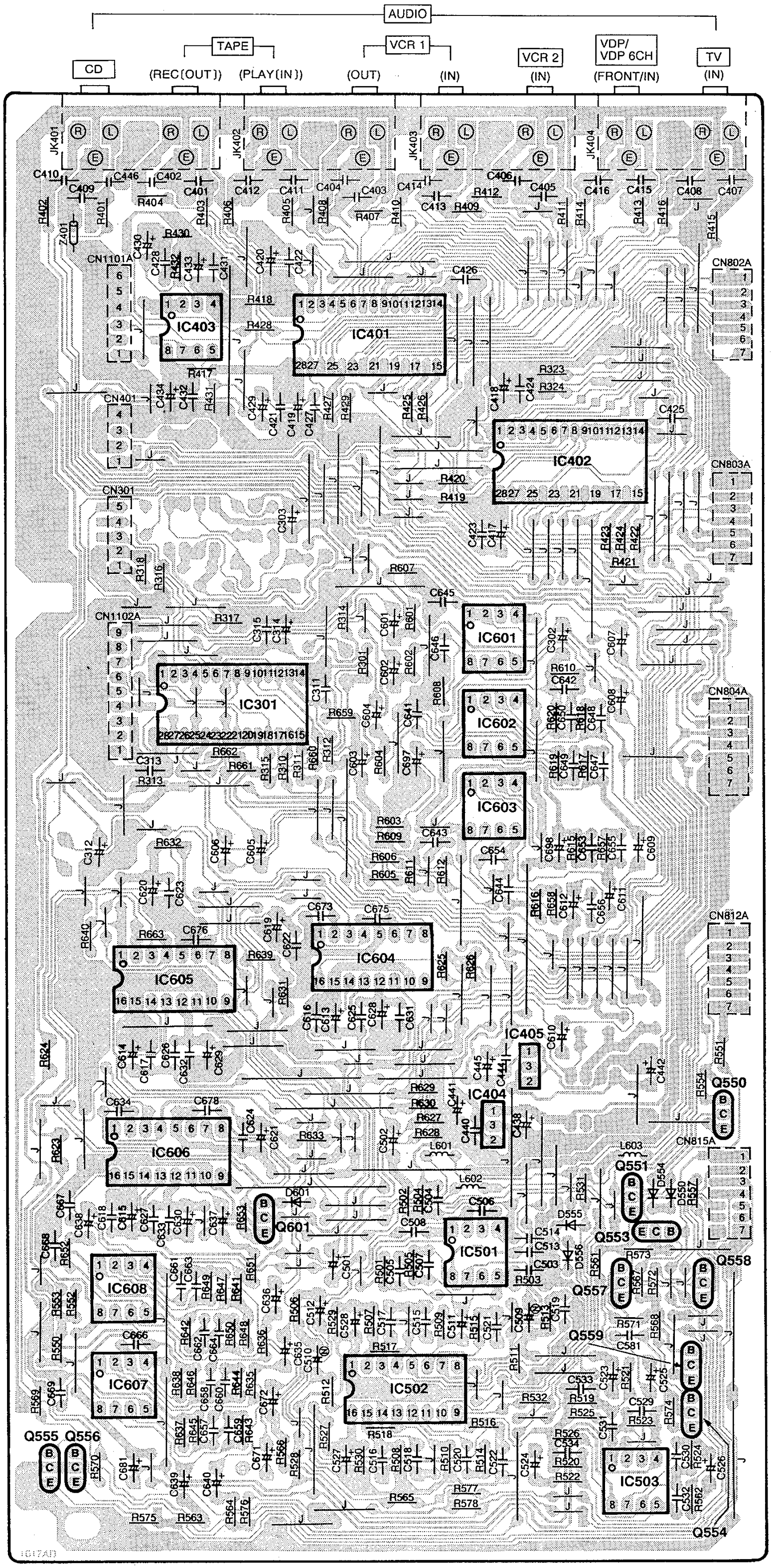
R SPEAKERS TERMINAL (2) P.C.B. (REP2278A–P)


JK808
C887
CENTER SPEAKERS
JK809
⟨L ch⟩
⟨R ch⟩
C889
C890
SURROUND SPEAKERS
CN821A
1617AF

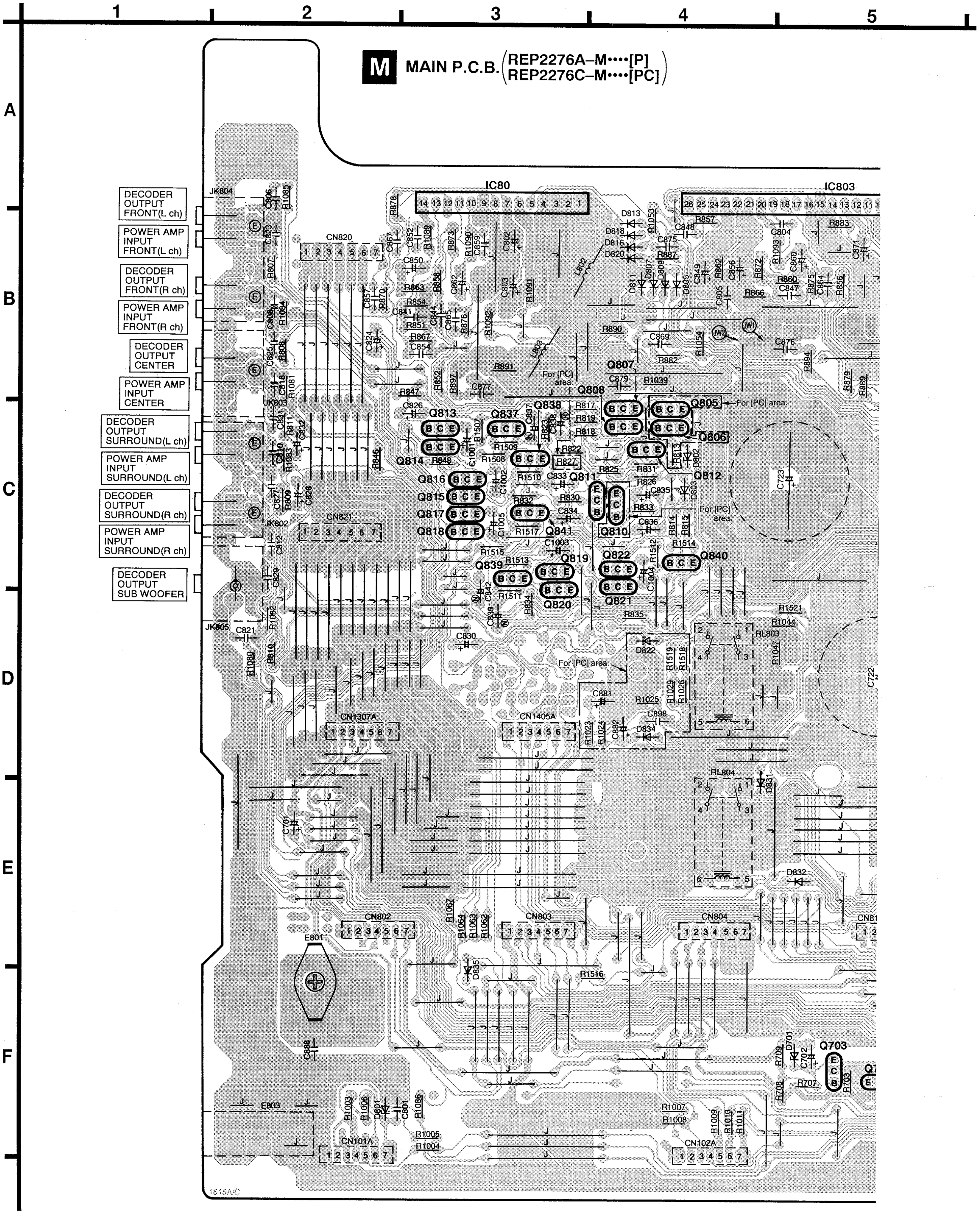
O POWER SUPPLY P.C.B. (REP2278A–P)

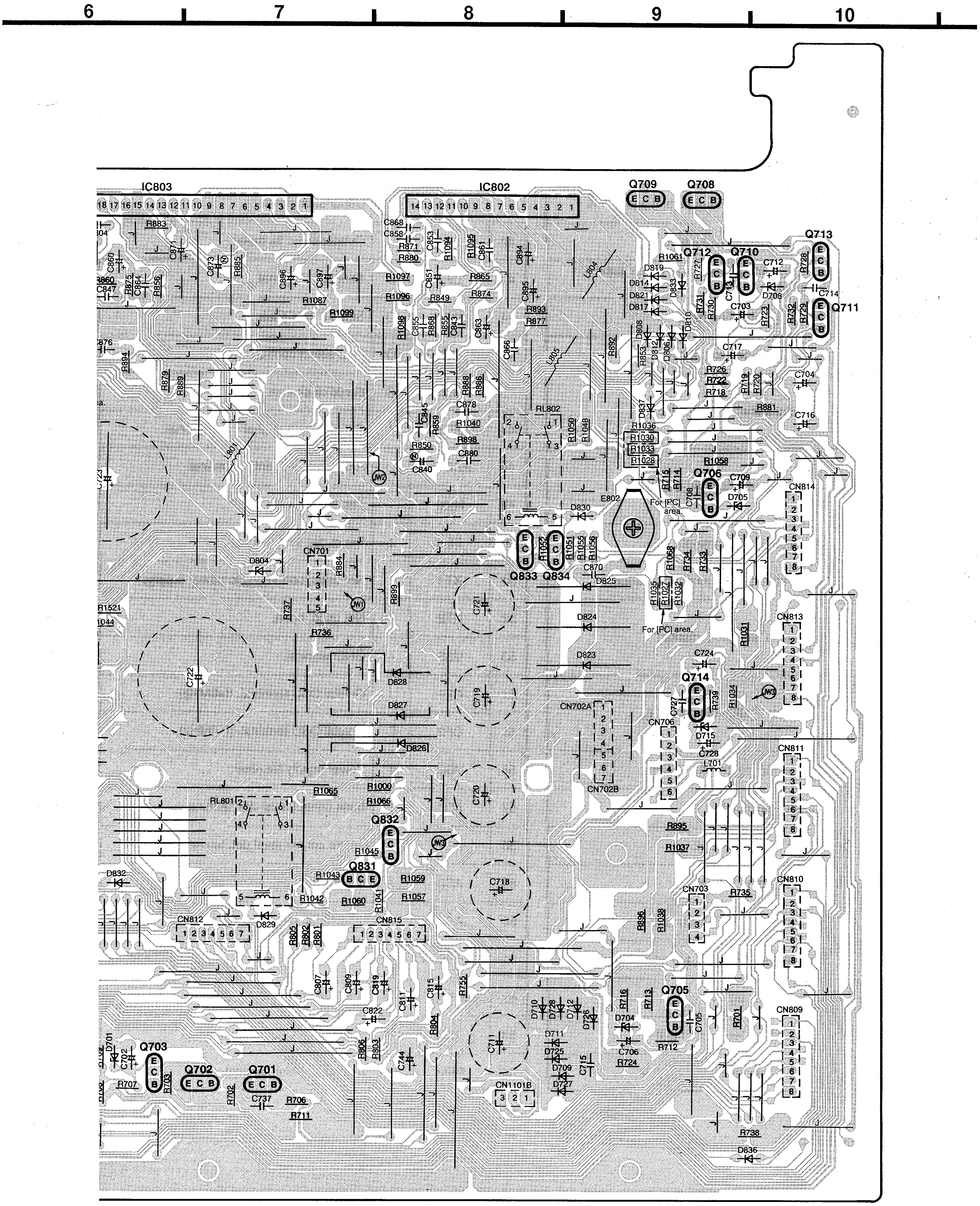

C726
D714
JW702
1
2
3
4
5
6
7
D713
C725
JW701
1
2
3
4
5
CN707A
CN707B
1 2 3 4 5 6 7 8 9 10
1617AG

L IN/OUT TERMINAL P.C.B. (REP2278A–P)


AUDIO
CD
TAPE
(REC(OUT))
(PLAY(IN))
VCR 1
(OUT)
(IN)
VCR 2
(IN)
VDP/
VDP 6CH
(FRONT/IN)
TV
(IN)
JK401
JK402
JK403
JK404
CN1101A
CN401
CN301
CN1102A
CN802A
CN803A
CN804A
CN812A
CN815A
IC401
IC402
IC403
IC404
IC405
IC301
IC501
IC502
IC503
IC601
IC602
IC603
IC604
IC605
IC606
IC607
IC608
Q550
Q551
Q553
Q554
Q555
Q556
Q557
Q558
Q559
Q601
D601
D554
D555
L601
L602
L603
1617AB

M MAIN P.C.B. (REP2276A-M····[P] REP2276C-M····[PC])


1
2
3
4
5
A
B
C
D
E
F
DECODER OUTPUT FRONT(L ch)
POWER AMP INPUT FRONT(L ch)
DECODER OUTPUT FRONT(R ch)
POWER AMP INPUT FRONT(R ch)
DECODER OUTPUT CENTER
POWER AMP INPUT CENTER
DECODER OUTPUT SURROUND(L ch)
POWER AMP INPUT SURROUND(L ch)
DECODER OUTPUT SURROUND(R ch)
POWER AMP INPUT SURROUND(R ch)
DECODER OUTPUT SUB WOOFER
JK804
JK803
JK802
JK805
IC80
IC803
CN820
CN821
CN1307A
CN1405A
CN802
CN803
CN804
CN101A
CN102A
E801
E803
RL803
RL804
Q703
Q805
Q806
Q807
Q808
Q810
Q811
Q812
Q813
Q814
Q815
Q816
Q817
Q818
Q819
Q820
Q821
Q822
Q837
Q838
Q839
Q840
Q841
For [PC] area.
C722
C723
L802
D822
D831
D832
D834
D835
1615A/C


6
7
8
9
10
IC803
IC802
Q709
Q708
Q713
Q712
Q710
Q711
Q706
Q714
Q705
Q703
Q702
Q701
Q833
Q834
Q832
Q831
RL801
RL802
L801
L804
L805
L701
E802
For [PC] area.
CN701
CN702A
CN702B
CN703
CN706
CN809
CN810
CN811
CN812
CN813
CN814
CN815
CN1101B
C718
C719
C720
C721
C722
C711
D823
D824
D825
D826
D827
D828
D829
D830
D832
D836
JW1
JW2
JW3
R1061
R1058
R1036
R1030
R1033
R1028
R738
R735
R895
R1037

■TERMINAL GUIDE

● IC901 (LC8A028B5A53): Microcomputer

Pin No.	Mark	I/O	Function
1	STLED	O	LED drive clock signal terminal.
2	SSEL	O	Signal select terminal.
3	VMUTE	O	Muting control terminal of video circuit.
4	ST91	O	Level shift control terminal.
5	PRELAY	O	Relay control terminal of power supply circuit.
6	AFMUTE	O	Muting control terminal.
7	LIGHT	O	AC switch control terminal.
8 〜 14	DG1 〜 DG7	O	Digital signal of FL display.
15	S13	O	Segment signal of FL display.
16	S12		
17	VDD	I	Power supply terminal.
18	VPP	I	Power supply terminal of FL display.
19 〜 27	S11 〜 S3	O	Digital signal of FL display.
28	S2	O	Segment signal of FL display.
29	S1		
30	DSPRST	O	Reset signal terminal of DSP.
31	STTC	O	Strobe terminal.
32	STVR	O	Chip select terminal.
33	INIT	I	Initial setting terminal.
34	FMST	I	Stereo signal det. terminal.
35	SD	I	Received signal det. terminal.
36	IF IN	I	Serial data signal.
37	DSPCS1	O	Chip select terminal of DSP 1.
38	DSPCS2	O	Chip select terminal of DSP 2.
39	DSPCSD	O	Command/ data input mode select terminal.
40	CE	O	Chip enable terminal.
41	DT1	O	Serial data signal.
42	OVLD	I	Overload det. terminal.
43	CK1	O	Serial clock signal.
44	DT2	O	Serial data signal.
45	STOSD	O	Chip select control terminal.
46	CK2	O	Serial clock signal.
47	EXDET	I	Synchronizing signal det. terminal.
48	ADSEL	O	Analog switch control terminal.
49	TEST	–	Test terminal.
50	RES	I	Reset det. terminal.
51	XT1	I	Not used, connected to power supply.
52	XT2	–	Not used, open.
53	VSS	–	GND terminal.
54	CF1	I	Crystal OSC terminal. (f=6MHz)
55	CF2	O	Crystal OSC terminal. (f=6MHz)
56	VDD	I	Power supply terminal.
57	AD1	I	Bass control level det. terminal.
58	AD2	I	Treble control level det. terminal.
59	AD3	I	Key switch det. terminal.
60	AD4	I	Volume control level det. terminal.
61	STANDBY	I	Power det. terminal.
62	DSPACK	O	Acknowledged signal terminal.
63	NC	–	Not used, open.
64	REM	I	Remote control terminal.

● IC1103 (AK5340B-VS): A/D converter

Pin No.	Mark	I/O	Function
1	AINL+	I	Analog signal terminal. (Lch)
2	AINL−		
3	VREF IN	I	Reference voltage terminal.
4	VA+	I	Analog power supply terminal.
5	AGND	–	Analog GND terminal.
6	NC	–	Not used, connected to GND.
7	NC		
8	TST1	–	Test terminal.
9	SEL18	I	Data with select terminal ("L": 16bit, "H": 18bit)
10	PD	I	Power down det. terminal.
11	TST2	I/O	Test terminal.
12	CMODE	I	Master clock select terminal ("L": 256fs, "H": 384fs)
13	SMODE	I	Interface clock select terminal ("L": Slave mode, "H": Master mode)
14	L/R	I/O	Input channel select terminal (Slave mode: fs clock input, Master mode: fs clock output)
15	SCLK	I/O	Serial data clock terminal (Slave mode: 32fs~64fs clock input, Master mode: 64fs clock output)
16	SDATA	O	Serial data signal (Power down [PD: "H"]: "L")
17	FSYNC	I/O	Frame synchronizing clock terminal (Slave mode: SDATA enable with "H", Master mode: 2fs clock output)
18	VDP+	I	Digital power supply terminal.
19	DGND	–	Digital GND terminal.
20	CLK	I	Master clock terminal. (CMODE: "H": 384fs, CMODE: "L": 256fs)
21	TST3	I/O	Test terminal.
22	TST4		
23	NC	–	Not used, connected to GND.
24	VDB+	I	Digital power supply terminal.
25	NC	–	Not used, connected to GND.
26	VREF	O	Reference voltage terminal.
27	AINR−	I	Analog signal terminal. (Rch)
28	AINR+		

● IC1106~1108 (AK4320-VM): D/A converter

Pin No.	Mark	I/O	Function
1	CKS	I	IClock select terminal. ("L": XTI=256fs, "H": XTI=384fs)
2	DVDD	I	Digital power supply terminal.
3	DVSS	–	Digital GND terminal.
4	XTO	O	Crystal OSC terminal. (Not used, open.)
5	XTI	I	Clock terminal.
6	PD	I	Power down det. terminal.
7	BICK	I	Serial bit clock terminal.
8	SDATA	I	Serial data terminal.
9	LRCK	I	L/R channel clock select terminal.
10	SMUTE	I	Soft mute terminal.
11	HOLD	I	Soft mute hold terminal.
12	DEM0	I	De-emphasis mode terminal.
13	DEM1	I	De-emphasis mode terminal.
14	DIF0	I	Input format terminal.
15	DIF1		
16	VCONT	O	Mute voltage control terminal. (Not used, open.)
17	AOUTR	O	Analog signal (R ch)
18	AOUTL	O	Analog signal (L ch)
19	VCOM	O	Common voltage (AVDD/Z) terminal.
20	AVDD	I	Analog power supply terminal.
21	AVSS	–	Analog GND terminal.
22	VREF	I	Reference voltage terminal.
23	DZF	O	Zero input det. terminal. (Not used, open.)
24	ZMUTE	I	Zero mute terminal.

● IC1104, 1105 (TC9332F-022): Digital signal processor

Pin No.	Mark	I/O	Function
1 ~ 3	TP8 ~ TP6	O	Test data terminal. (Not used, open.)
4	VDD	I	Power supply terminal.
5	VSS	–	GND terminal.
6 ~ 11	TP5 ~ TP0	O	Test data terminal. (Not used, open.)
12	VSSR	–	GND terminal of internal delay RAM (DLRAM)
13	VDDR	I	Power supply terminal of internal delay RAM. (DLRAM)
14	VSS	–	GND terminal.
15 ~ 17	SDO2 ~ SDO0	O	Serial data terminal.
18	SD11	I	Serial data terminal.
19	SD10		
20	LR	O	LR clock terminal. (1fs)
21	WCK	O	Word clock terminal. (2fs)
22	FS32	O	Bit clock terminal. (32fs) (Not used, open.)
23	FS64	O	Bit clock terminal. (64fs)
24	EBCO	I	Bit clock terminal.
25	EBC11		
26	EBC10		
27	ELRO	I	LR clock terminal.
28	ELR11	I	LR clock terminal.
29	ELR10		
30	SYNC	I	Synchronizing signal terminal.
31	VDD	I	Power supply terminal.
32	XI	I	Crystal OSC terminal.
33	XO	–	Not used, open.
34	VSS	–	GND terminal.
35	CKSL	I	Clock select terminal ("L": 384fs, "H": 512fs)
36	PLOFF	I	X'tal OSC mode/ VCO OSC mode select terminal.
37	PD	O	Phase comparative data terminal. (Not used, open.)
38	VSSA	–	Analog GND terminal.
39	AMPO	O	Amp. terminal of L.P.F.
40	AMPI	I	
41	VDDA	I	Analog power supply terminal. (Not used, open.)
42 ~ 44	TES0 ~ TES2	I	Test terminal.
45	$\overline{\text{RST}}$	I	Reset signal terminal.
46	$\overline{\text{CS}}$	I	Chip select signal terminal.
47	IFCD	I	Command/ data input mode select terminal.
48	IFDI	I	Data signal terminal.
49	IFDO	O	Data (DBUS) terminal.
50	IFCK	I	Shift clock terminal of data.
51	$\overline{\text{ACK}}$	I	Acknowledged signal terminal.
52	VSS	–	GND terminal
53 ~ 60	TP16 ~ TP9	O	Test data terminal. (Not used, open.)

● IC1402 (MB90082PF117): OSD control

Pin No.	Mark	I/O	Function
1	YIN	I	Brightness signal input terminal.
2	VIN	I	Composite video signal input terminal
3	CIN	I	Color signal input terminal.
4	AVCC	I	Power supply terminal.
5	SYNCST	O	Synchronizing signal of $\overline{\text{EXHSYN}}$ input detect terminal.
6	$\overline{\text{VBLK}}$	O	Vertical blanking signal output terminal. (Not used, open.)
7	VCC	I	Power supply terminal.
8	EXS	I	Clock generator terminal.
9	$\overline{\text{XS}}$	O	
10	$\overline{\text{HSYNC}}$	O	Horizontal synchronizing signal output. (Not used, open.)
11	$\overline{\text{VSYNC}}$	O	Vertical synchronizing signal output. (Not used, open.)
12	$\overline{\text{EXHSYNC}}$	I	External horizontal synchronizing signal input.
13	$\overline{\text{EXVSYN}}$	I	External vertical synchronizing signal input. (Not used, open.)
14	VSS	–	GND terminal.
15	EXD	I	Dot clock generator terminal. (Not used, connected to capacitor.)
16	XD	O	
17	VOB	O	Background of display output. (Not used, open.)
18	VOC2	O	Color signal output terminal. (Not used, open.)
19	VOC1	O	Color signal output terminal. (Not used, open.)
20	VCO0	O	Color signal output terminal. (Not used, open.)
21	$\overline{\text{TEST}}$	I	Test signal input terminal (Not used, connected to power supply.)
22	SCLK	I	Shift clock input terminal.
23	SIN	I	Serial data input terminal.
24	$\overline{\text{CS}}$	I	Chip select terminal.
25	COUT	O	Color signal output terminal.
26	VOUT	O	Composite video signal output terminal.
27	YOUT	O	Brightness signal output terminal.
28	AVSS	–	GND terminal.

REPLACEMENT PARTS LIST

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC101	LA1832A	FM/AM IF AMP/AM OSC	
IC102	LC7218	PLL FREQ SYNTHESIZER	
IC201	TSA3000J	AC SWITCH	
IC301	TC9162N	SIGNAL SELECTOR	
IC350	BA6138	METER CONTROL	
IC351	M5218AP	METER DRIVE	
IC401	TC9163N	INPUT SELECTOR	
IC402	TC9164N	INPUT SELECTOR	
IC403	UPC4570C	BUFFER AMP	
IC404	AN78L05TA	REGULATOR	⚠
IC405	AN79L05TA	REGULATOR	⚠
IC450	BA6218	MOTER DRIVE	
IC501	UPC4570C	TONE AMP	
IC502	TC9184P	TONE CONTROL	
IC503	M5218AP	BUFFER AMP	
IC601-603	M5218AP	BUFFER AMP	
IC604-606	CS3310-KP	ELECTRONIC VOLUME	
IC607, 608	M5218AP	BUFFER AMP	
IC801, 802	RSN36S5A	POWER AMP (FRONT/SURROUND)	⚠
IC803	RSN33M5	POWER AMP (CENTER)	⚠
IC901	LC8A028B5A53	MICROCOMPUTER	
IC902	BU2092F	L. E. D DRIVE	
IC903	TC4053BF	KEY SELECTOR	
IC1101	NJM2115MT1	FILTER AMP	
IC1102	NJM2115MT1	FILTER AMP	
IC1103	AK5340B-VS	A/D CONVERTER	
IC1104	TC9332F-022	DIGITAL SIGNAL PROCESSOR	
IC1105	TC9332F-022	DIGITAL SIGNAL PROCESSOR	
IC1106	AK4320-VM	D/A CONVERTER	
IC1107	AK4320-VM	D/A CONVERTER	
IC1108	AK4320-VM	D/A CONVERTER	
IC1109	NJM2115MT1	D/A CONVERTER	
IC1110	NJM2115MT1	D/A CONVERTER	
IC1111	NJM2115MT1	D/A CONVERTER	
IC1112	TC7W74FTE12L	D/A CONVERTER	
IC1113	TC7WU04FT12L	INVERTER	
IC1114	LM2940T5	REGULATOR	⚠
IC1115	LM2940T5	REGULATOR	⚠
IC1116	TC7W74FTE12L	D-FF	
IC1117	TC7S04FTE85L	INVERTER	
IC1118	TC74HC164AFL	8-BIT SHIFT REGISTER	
IC1119	TC7S32FTE85L	INVERTER	
IC1301	BA7625	VIDEO SELECTOR	
IC1302	BA7625	VIDEO SELECTOR	
IC1303	BA7625	VIDEO SELECTOR	
IC1401	TC4W53FTE12L	SIGNAL SELECTOR	
IC1402	MB90082PF117	OSD CONTROL	
IC1403	TC7W02FTE12L	NOR GATE	
IC1404	LA7213	SYNCHRONIZED SEPARATOR	
IC1405	TC4053BF	SIGNAL SELECTOR	
		TRANSISTOR(S)	
Q101	2SC2787L	TRANSISTOR	
Q103, 104	2SC2785FE	TRANSISTOR	
Q106	UN411FTA	TRANSISTOR	
Q107, 108	2SC3311ARSTA	TRANSISTOR	
Q201	UN4119	TRANSISTOR	
Q301	UN4213AITA	TRANSISTOR	
Q550	UN4113	TRANSISTOR	
Q551	UN4213AITA	TRANSISTOR	
Q553-558	2SD1915FTA	TRANSISTOR	
Q559	UN4115	TRANSISTOR	
Q601	UN4213AITA	TRANSISTOR	
Q701, 702	2SD2374PQAU	TRANSISTOR	⚠
Q703	2SC3311A-Q	TRANSISTOR	⚠
Q705	2SB621A-R	TRANSISTOR	⚠
Q706	2SC3940AQSTA	TRANSISTOR	⚠
Q708	2SB1548PQAU	TRANSISTOR	⚠
Q709	2SD2374PQAU	TRANSISTOR	⚠
Q710	2SC3311A-Q	TRANSISTOR	⚠
Q711	2SA1309A-R	TRANSISTOR	⚠
Q712	2SC3311A-Q	TRANSISTOR	⚠
Q713	2SA1309A-R	TRANSISTOR	⚠
Q714	2SC3940AQSTA	TRANSISTOR	⚠
Q715	UN4219TA	TRANSISTOR	
Q716-718	2SA1309A-R	TRANSISTOR	
Q719	2SA1534AQRTA	TRANSISTOR	
Q720, 721	2SA1309A-R	TRANSISTOR	
Q801-804	2SD1915FTA	TRANSISTOR	
Q805	UN4213AITA	TRANSISTOR	(PC)
Q806	UN4113	TRANSISTOR	(PC)
Q807	UN4211	TRANSISTOR	
Q808	UN4113	TRANSISTOR	
Q810	UN4210TA	TRANSISTOR	(PC)
Q811, 812	UN4210-S	TRANSISTOR	
Q813	2SA1309A-R	TRANSISTOR	
Q814	2SC3311A-Q	TRANSISTOR	
Q815	2SA1309A-R	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q816	2SC3311A-Q	TRANSISTOR	
Q817	2SA1309A-R	TRANSISTOR	
Q818	2SC3311A-Q	TRANSISTOR	
Q819	2SA1309A-R	TRANSISTOR	
Q820	2SC3311A-Q	TRANSISTOR	
Q821	2SA1309A-R	TRANSISTOR	
Q822	2SC3311A-Q	TRANSISTOR	
Q831-834	UN4119	TRANSISTOR	
Q837-841	2SC3311A-Q	TRANSISTOR	
Q902	2SA1309A-R	TRANSISTOR	⚠
Q903	UN4214TA	TRANSISTOR	
Q904	UN4111	TRANSISTOR	
Q905	UN4211	TRANSISTOR	
Q906	UN4216-S	TRANSISTOR	
Q907	UN4113	TRANSISTOR	
Q908, 909	UN4213AITA	TRANSISTOR	
Q910	UN4113	TRANSISTOR	
Q1101	UN4213AITA	TRANSISTOR	
Q1301-1306	2SA1309A-R	TRANSISTOR	
Q1401, 1402	2SC3311A-Q	TRANSISTOR	
Q1403	UN4111	TRANSISTOR	
Q1404, 1405	2SC3311A-Q	TRANSISTOR	
Q1406, 1407	2SA1309A-R	TRANSISTOR	
Q1408	2SC3311A-Q	TRANSISTOR	
Q1409	2SA1309A-R	TRANSISTOR	
Q1410, 1411	2SC3311A-Q	TRANSISTOR	
Q1412	UN4213AITA	TRANSISTOR	
		DIODE(S)	
D101	MA4051MTA	DIODE	⚠
D102	MA165	DIODE	
D351-359	MA165	DIODE	
D401	MA4062MTA	DIODE	
D550	MA165	DIODE	
D554	MA165	DIODE	
D555, 556	MA700	DIODE	
D601	MA165	DIODE	
D701	MA4030MTA	DIODE	⚠
D704	MA4220MTA	DIODE	⚠
D705	MA4062MTA	DIODE	⚠
D708	MA4062	DIODE	⚠
D709-712	1SR35200TB	DIODE	⚠
D713, 714	SVDS10VB20F	DIODE	⚠
D715	MA4068M	DIODE	⚠
D716	MA165	DIODE	
D717-720	1SR35200TB	DIODE	⚠
D721	MA165	DIODE	
D722	MA4082LTA	DIODE	
D723	MA165	DIODE	
D725-728	1SR35200TB	DIODE	⚠
D801	MA4075MTA	DIODE	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
D802, 803	MA4030MTA	DIODE	⚠
D804	MA4062MTA	DIODE	
D805-814	MA167	DIODE	
D816-821	MA167	DIODE	
D822	MA4091-M	DIODE	(PC)
D823-828	SB360L6508	DIODE	
D829-833	MA165	DIODE	
D834	MA167	DIODE	(PC)
D835-837	MA165	DIODE	
D901, 902	MA165	DIODE	
D903	MA4056MTA	DIODE	⚠
D904	MA4039MTA	DIODE	⚠
D913	MA165	DIODE	
D914, 915	1SS291TA	DIODE	
D917-922	SLR-325VC	L. E. D.	
D923	MA4062MTA	DIODE	
D926	MA165	DIODE	
D927	MA4030MTA	DIODE	
D928	MA165	DIODE	
D1401-1405	MA165	DIODE	
		VARIABLE RESISTOR(S)	
VR350, 351	EVNDXAA00B23	POWER METER ADJ.	
VR450	EUWMR9F201J9	VOLUME CONTROL	
VR901, 902	EVJ02KF02B24	TONE(BASS/TREBLE) CONTROL	
		THERMISTOR(S)	
TH350, 351	ERTD2ZHL104T	THERMISTOR	
		COIL(S)	
L101	ELESN1R5MA	COIL	
L103	ELEXTR47MA9	COIL	
L450, 451	RLQZP1R0KT-Y	COIL	
L601-603	RLQZP101KT-Y	COIL	
L701	ELEPK101KA	COIL	
L801-805	SLQY07G-40	COIL	
L901	RLQZP1R8KT-Y	COIL	
L902	RLQZP101KT-Y	COIL	
L1101, 1102	RLQZB8R2KT-D	COIL	
L1103-1106	RLQZP100KT-Y	COIL	
L1107-1112	RLQZP1R2KT-Y	COIL	
L1113	RLQZP1R8KT-Y	COIL	
L1115, 1116	RLQZP1R8KT-Y	COIL	
L1118, 1119	RLQZP1R8KT-Y	COIL	
L1121, 1122	RLQZP1R8KT-Y	COIL	
L1124	RLQZP1R8KT-Y	COIL	
L1125, 1126	RLQZB101KT-D	COIL	
L1127-1133	RLQZP1R8KT-Y	COIL	
L1135	RLQZP1R2KT-Y	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
L1401	RLQZP220KT-Y	COIL	
L1402	RLQZB101KT-D	COIL	
L1403	RLQZP101KT-Y	COIL	
L1404	RLQZB101KT-D	COIL	
L1405-1410	RLQZP1R8KT-Y	COIL	
		TRANSFORMER(S)	
T701	RTP1H5C001-V	POWER TRANSFORMER(SUB)	⚠
T702	RTP1Q5C010-W	POWER TRANSFORMER(MAIN)	⚠
		COMPONENT COMBINATION(S)	
Z101	RLA2Z002M-T	COMPONENT COMBINATION	
Z102	RLI2Z006M-T	COMPONENT COMBINATION	
Z401	BL02RN2R65T2	COMPONENT COMBINATION	
Z701	ERZV10V511CS	SURGE ABSORBER	⚠
Z901	RCDHC-278N	REMOTE SENSOR	
Z1122-1126	BL02RN2R65T2	COMPONENT COMBINATION	
		FILTER(S) AND OSCILLATOR(S)	
CF201	RLFFETNGD01L	FILTER	
CF202	RLFFETMGD01L	FILTER	
CF901	EF0EC6004T4	OSCILLATOR(6MHz)	
X101	RSXZ456KM07M	OSCILLATOR(456KHz)	
X102	RLFDGTD01I	OSCILLATOR(10.65MHz)	
X103	RSXC7M20S05T	OSCILLATOR(7.2MHz)	
X1101	RSXC22M5S01T	OSCILLATOR(22.5MHz)	
X1401	RSXC14M3S01	OSCILLATOR(14.31818MHz)	
		DISPLAY TUBE(S)	
FL901	RSL0224-F	DISPLAY TUBE	
		FM FRONT END PACK ASS'Y(S)	
Z120	ENV17290G1Y	FM FRONT END	
		LAMP(S)	
PL200-209	XAMR131	LAMP	
		FUSE(S)	
F1	XBA1C100NBAU	FUSE, 125V 10A	⚠
F2, 3	XBA1C80NBAU	FUSE, 125V 8A	⚠
F4	XBA1C25NBAU	FUSE, 125V 2.5A	⚠
		SWITCH(ES)	
S901	EVQ21405R	SFC	

Ref. No.	Part No.	Part Name & Description	Remarks
S902	EVQ21405R	THX CINEMA	
S903	EVQ21405R	CENTER MODE	
S904	EVQ21405R	POWER	
S905	EVQ21405R	SUB WOOFER OFF/ON	
S906	EVQ21405R	HELP/RESET	
S907	EVQ21405R	STEREO	
S908	EVQ21405R	SPEAKERS A	
S909	EVQ21405R	SURROUND	
S910	EVQ21405R	FM AUTO/MONO	
S911	EVQ21405R	SPEAKERS B	
S912	EVQ21405R	3 STEREO	
S913	EVQ21405R	DELAY TIME	
S914	EVQ21405R	BAND	
S915	EVQ21405R	TUNING UP( )	
S916	EVQ21405R	INPUT SELECTOR DOWN( )	
S917	EVQ21405R	FM AUTO/MONO	
S918	EVQ21405R	PRESET DOWN( )	
S919	EVQ21405R	INPUT SELECTOR UP( )	
S920	EVQ21405R	MEMORY	
S921	EVQ21405R	PRESET UP( )	
S922	EVQ21405R	TUNING DOWN( )	
		RELAY(S)	
RL701	RSY0021-0	RELAY	⚠
RL801-804	RSY0013M-0	RELAY	⚠
		CONNECTOR(S) AND SOCKET(S)	
CN101	RJU057W007	SOCKET(7P)	
CN101A	RJT057W007-1	CONECTOR(7P)	
CN102	RJU057W007	SOCKET(7P)	
CN102A	RJT057W007-1	CONECTOR(7P)	
CN201	SJT30345JQ	CONNECTOR(3P)	
CN201A	SJS50382JQH	CONECTOR(3P)	
CN202	RJP5G17ZA	CONNECTOR(5P)	
CN301	SJT3513	CONNECTOR(5P)	
CN401	SJT3417	CONNECTOR(4P)	
CN650	RJT003K008-1	CONNECTOR(8P)	
CN650A	RJU003K008M1	SOCKET(8P)	
CN701	RJS1A6605	CONNECTOR(5P)	
CN702A	RJS1A6604	CONNECTOR(4P)	
CN702B	RJS1A6603	CONNECTOR(3P)	
CN703	RJS1A6604	CONNECTOR(4P)	
CN706	RJS1A6606	CONNECTOR(6P)	
CN707A	RJS1A6605	CONNECTOR(5P)	
CN707B	RJS1A6605	CONNECTOR(5P)	
CN717	SJS305-1	CONNECTOR(3P)	
CN728	RJS1A7402-1	CONNECTOR(2P)	
CN751-759	RJS1A1101T1	CONNECTOR(1P)	
CN802	RJT057W007-1	CONNECTOR(7P)	
CN802A	RJU057W007	SOCKET(7P)	

Ref. No.	Part No.	Part Name & Description	Remarks
CN803	RJT057W007-1	CONNECTOR(7P)	
CN803A	RJU057W007	SOCKET(7P)	
CN804	RJT057W007-1	CONNECTOR(7P)	
CN804A	RJU057W007	SOCKET(7P)	
CN809	RJU003K008M1	SOCKET(8P)	
CN809A	RJT003K008-1	CONNECTOR(8P)	
CN810	RJU003K008M1	SOCKET(8P)	
CN810A	RJT003K008-1	CONNECTOR(8P)	
CN811	RJU003K008M1	SOCKET(8P)	
CN811A	RJT003K008-1	CONNECTOR(8P)	
CN812	RJT057W007-1	CONNECTOR(7P)	
CN812A	RJU057W007	SOCKET(7P)	
CN813	RJU003K008M1	SOCKET(8P)	
CN813A	RJT003K008-1	CONNECTOR(8P)	
CN814	RJU003K008M1	SOCKET(8P)	
CN814A	RJT003K008-1	CONNECTOR(8P)	
CN815	RJT057W007-1	CONNECTOR(7P)	
CN815A	RJU057W007	SOCKET(7P)	
CN816	RJT057W004-1	CONNECTOR(4P)	
CN816A	RJU057W004	SOCKET(4P)	
CN820	RJU060G07T	SOCKET(7P)	
CN820A	RJT060R07	CONNECTOR(7P)	
CN821	RJU060G07T	SOCKET(7P)	
CN821A	RJT060R07	CONNECTOR(7P)	
CN907	RJS1A6606	CONNECTOR(6P)	
CN909	RJS1A6606	CONNECTOR(6P)	
CN911	RJS1A6605	CONNECTOR(5P)	
CN915	RJS1A6604	CONNECTOR(4P)	
CN917	RJS1A6606	CONNECTOR(6P)	
CN1101A	SJT3613	CONNECTOR(6P)	
CN1101B	RJT029W03VT	CONNECTOR(3P)	
CN1102A	SJT3909	CONNECTOR(9P)	
CN1103	SJT3809	CONNECTOR(8P)	
CN1306	SJT3321	CONNECTOR(3P)	
CN1307	RJU057W007	SOCKET(7P)	
CN1307A	RJT057W007-1	CONNECTOR(7P)	
CN1308	RJT057W007-1	CONECTOR(7P)	
CN1308A	RJU057W007	SOCKET(7P)	
CN1309	RJT057W007-1	CONECTOR(7P)	
CN1309A	RJU057W007	SOCKET(7P)	
CN1405	RJU057W007	SOCKET(7P)	
CN1405A	RJT057W007-1	CONNECTOR(7P)	
		JACK(S) AND TERMINAL(S)	
HP818	RJJ63TA01	HEADPHONES JACK	
JK101	RJH4405-1M	ANT TERMINAL	
JK301	SJF3069-13N	VDP 6CH IN (AUDIO)	
JK401	SJF3069-5N	CD IN, TAPE REC OUT (AUDIO)	
JK402	SJF3069N	VCR1OUT, TAPE PLAY IN(AUDIO)	
JK403	SJF3069N	VCR1 IN, VCR2 IN/OUT (AUDIO)	
JK404	SJF3069N	VDP/VDP 6CH/TV IN(AUDIO)	

Ref. No.	Part No.	Part Name & Description	Remarks
JK405	SJFK5-1	VCR 3 AUDIO/IN	
JK701	RJS2A0102-1S	AC OUTLET	⚠
JK703	SJSD16-1	AC INLET	⚠
JK802	SJF3069-2N	POWER AMP IN, DECODEROUT	
		(SURROUND)	
JK803	SJF3068-3N	POWER AMP IN, DECODEROUT	
		(CENTER)	
JK804	SJF3069-2N	POWER AMP IN, DECODEROUT	
		(FRONT)	
JK805	SJFD7	DECODER OUT(SUB WOOFER)	
JK807	RJH4801-1	FRONT SPEAKERS	
JK808	RJH4203A	CENTER SPEAKERS	
JK809	RJH4406	SURROUND SPEAKERS	
JK1301	SJFD7-5	TV IN(VIDEO)	
JK1302	SJF3069-12N	VCR2/VDP IN, TV MONI. (VIDEO)	
JK1303	SJF3068-2N	VCR1 IN/OUT(VIDEO)	
JK1401	RJS1D1104	VCR1/TV MONITOR(S-VIDEO)	
JK1402	RJS1D1104	VCR1/VDP IN (S-VIDEO)	
		GND PLATE(S)	
E801, 802	SNE1004-2	GND PLATE	
E803	RMA0824	GND PLATE	
		FUSE HOLDER(S)	
FC701-708	EYF52BC	FUSE HOLDER	

■RESISTORS AND CAPACITORS

Notes: ∗ Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
∗ Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R102	ERDS1FVJ104T	1/2W 100K ⚠
R103	ERDS2TJ101	1/4W 100
R104	ERDS2TJ102	1/4W 1K
R105	ERDS2TJ471	1/4W 470
R106	ERDS2TJ224T	1/4W 220K
R107	ERDS2TJ471	1/4W 470
R110	ERDS2TJ102	1/4W 1K
R112	ERDS2TJ104	1/4W 100K
R113	ERDS2TJ103	1/4W 10K
R114	ERDS2TJ562	1/4W 5.6K
R115	ERDS2TJ561	1/4W 560
R116	ERDS2TJ102	1/4W 1K
R117	ERDS2TJ473	1/4W 47K
R118	ERDS2TJ562	1/4W 5.6K
R119	ERDS2TJ183T	1/4W 18K
R120	ERDS2TJ473	1/4W 47K
R121	ERDS2TJ332	1/4W 3.3K
R122	ERDS2TJ272T	1/4W 2.7K
R124	ERDS2TJ271	1/4W 270
R125, 126	ERDS2TJ472	1/4W 4.7K
R127	ERDS2TJ103	1/4W 10K
R128	ERDS2TJ820	1/4W 82
R129	ERDS2TJ473	1/4W 47K
R130, 131	ERDS2TJ102	1/4W 1K
R132	ERDS2TJ103	1/4W 10K
R133-137	ERDS2TJ102	1/4W 1K
R139, 140	ERDS2TJ272T	1/4W 2.7K
R141, 142	ERDS2TJ103	1/4W 10K
R143, 144	ERDS2TJ222	1/4W 2.2K
R145, 146	ERDS2TJ102	1/4W 1K
R147, 148	ERDS2TJ474	1/4W 470K
R149	ERDS2TJ680T	1/4W 68
R171, 172	ERDS2TJ102	1/4W 1K
R173	ERDS2TJ471	1/4W 470
R175	ERDS2TJ102	1/4W 1K
R176	ERDS2TJ391	1/4W 390
R202	ERDS1FVJ101T	1/2W 100 ⚠
R203	ERDS2TJ101	1/4W 100
R204	ERDS2TJ271	1/4W 270
R205, 206	ERDS2TJ103	1/4W 10K
R301	ERDS2TJ224T	1/4W 220K
R310-312	ERDS2TJ103	1/4W 10K
R313, 314	ERDS2TJ102	1/4W 1K
R315, 316	ERDS2TJ103	1/4W 10K
R317, 318	ERDS2TJ332	1/4W 3.3K
R319, 320	ERDS2TJ822	1/4W 8.2K
R321, 322	ERDS2TJ153	1/4W 15K
R323	ERDS2TJ103	1/4W 10K
R324	ERDS2TJ682T	1/4W 6.8K
R350	ERDS2TJ103	1/4W 10K
R351	ERDS1FVJ101T	1/2W 100 ⚠
R352	ERDS2TJ155	1/4W 1.5M
R353	ERDS2TJ331	1/4W 330
R354	ERDS2TJ104	1/4W 100K
R355	ERDS2TJ331	1/4W 330
R356	ERDS2TJ155	1/4W 1.5M
R357, 358	ERDS2TJ682T	1/4W 6.8K
R359, 360	ERDS2TJ103	1/4W 10K
R361, 362	ERDS2TJ821	1/4W 820
R363	ERDS2TJ223	1/4W 22K
R364	ERDS2TJ102	1/4W 1K
R365	ERDS2TJ223	1/4W 22K
R366	ERDS2TJ102	1/4W 1K
R367, 368	ERDS2TJ681	1/4W 680
R369	ERDS2TJ154	1/4W 150K
R370	ERDS1FVJ101T	1/2W 100 ⚠
R371	ERDS2TJ154	1/4W 150K
R372, 373	ERDS2TJ123	1/4W 12K
R401-420	ERDS2TJ102	1/4W 1K
R421-426	ERDS2TJ103	1/4W 10K
R427, 428	ERDS2TJ471	1/4W 470
R429, 430	ERDS2TJ473	1/4W 47K
R431, 432	ERDS2TJ104	1/4W 100K
R434, 435	ERDS2TJ102	1/4W 1K
R437, 438	ERDS2TJ224T	1/4W 220K
R439	ERDS2TJ471	1/4W 470
R450	ERDS2TJ104	1/4W 100K
R451	ERDS1FVJ2R2T	1/2W 2.2 ⚠
R452	ERDS2TJ562	1/4W 5.6K
R453	ERDS2TJ103	1/4W 10K
R501, 502	ERDS2TJ271	1/4W 270
R503, 504	ERDS2TJ182	1/4W 1.8K
R505, 506	ERDS2TJ474	1/4W 470K
R507, 508	ERDS2TJ332	1/4W 3.3K
R509, 510	ERDS2TJ333	1/4W 33K
R511, 512	ERDS2TJ243T	1/4W 24K
R513, 514	ERDS2TJ562	1/4W 5.6K
R515, 516	ERDS2TJ681	1/4W 680
R517, 518	ERDS2TJ224T	1/4W 220K
R519, 520	ERDS2TJ392T	1/4W 3.9K
R521, 522	ERDS2TJ223	1/4W 22K
R523, 524	ERDS2TJ152	1/4W 1.5K
R525, 526	ERDS2TJ102	1/4W 1K
R527, 528	ERDS2TJ123	1/4W 12K
R529, 530	ERDS2TJ223	1/4W 22K
R531, 532	ERDS2TJ473	1/4W 47K
R550	ERDS2TJ822	1/4W 8.2K
R551, 552	ERDS2TJ472	1/4W 4.7K
R553	ERDS2TJ824	1/4W 820K
R554	ERDS2TJ102	1/4W 1K
R557	ERDS2TJ103	1/4W 10K
R561-566	ERDS2TJ471	1/4W 470
R567-572	ERDS2TJ102	1/4W 1K
R573-578	ERDS2TJ823T	1/4W 82K
R601-606	ERDS2TJ102	1/4W 1K
R607, 608	ERDS2TJ273	1/4W 27K
R609-612	ERDS2TJ104	1/4W 100K
R615-617	ERDS2TJ102	1/4W 1K
R618	ERDS2TJ152	1/4W 1.5K
R619	ERDS2TJ272T	1/4W 2.7K
R620	ERDS2TJ392T	1/4W 3.9K
R623	ERDS1FVJ101T	1/2W 100 ⚠
R624	ERDS1FVJ221T	1/2W 220 ⚠
R625-630	ERDS2TJ104	1/4W 100K
R631-633	ERG1SJ100E	1W 10
R635	ERDS2TJ102	1/4W 1K
R636	ERDS2TJ152	1/4W 1.5K
R637	ERDS2TJ104	1/4W 100K
R638	ERDS2TJ823T	1/4W 82K
R639, 640	ERDS2TJ473	1/4W 47K
R641, 642	ERDS2TJ104	1/4W 100K
R643	ERDS2TJ152	1/4W 1.5K
R644	ERDS2TJ123	1/4W 12K
R645	ERDS2TJ102	1/4W 1K
R646	ERDS2TJ152	1/4W 1.5K
R647, 648	ERDS2TJ102	1/4W 1K
R649, 650	ERDS2TJ152	1/4W 1.5K
R651, 652	ERDS2TJ102	1/4W 1K
R653	ERDS2TJ473	1/4W 47K
R657, 658	ERDS2TJ102	1/4W 1K
R659-662	ERDS2TJ154	1/4W 150K
R663	ERDS2TJ103	1/4W 10K
R701	ERDS1FVJ1R0T	1/2W 1.0 (P)⚠
R701	ERDS1FVJ2R7T	1/2W 2.7 (PC)⚠
R702, 703	ERDS2TJ1R8T	1/4W 1.8
R706	ERDS2TJ681	1/4W 680
R707	ERDS2TJ122	1/4W 1.2K
R708	ERDS2TJ222	1/4W 2.2K
R709	ERDS2TJ682T	1/4W 6.8K
R710	ERDS2TJ102	1/4W 1K
R711	ERDS1FVJ1R0T	1/2W 1.0 ⚠
R712	ERDS2TJ332	1/4W 3.3K
R713	ERDS1FVJ681T	1/2W 680 ⚠
R714	ERDS1FVJ220T	1/2W 22 ⚠

Ref. No.	Part No.	Values & Remarks
R715	ERDS2TJ182	1/4W 1.8K
R716	ERDS1FVJ681T	1/2W 680 ⚠
R717	ERDS1FVJ1R0T	1/2W 1.0 ⚠
R718	ERDS2TJ273	1/4W 27K
R719	ERDS2TJ222	1/4W 2.2K
R720	ERDS2TJ273	1/4W 27K
R722	ERDS2TJ752T	1/4W 7.5K
R723	ERDS2TJ682T	1/4W 6.8K
R724	ERDS1FVJ681T	1/2W 680 ⚠
R726	ERDS2TJ472	1/4W 4.7K
R727, 728	ERDS2TJ221	1/4W 220
R729, 730	ERDS2TJ102	1/4W 1K
R731, 732	ERDS2TJ472	1/4W 4.7K
R733, 734	ERDS1FVJ100T	1/2W 10 ⚠
R735	ERX1SJR22E	1W 0.22
R736, 737	ERDS2TJ333	1/4W 33K
R738	ERX1SJR22E	1W 0.22
R739	ERDS2TJ102	1/4W 1K
R740	ERDS2TJ682T	1/4W 6.8K
R741	ERDS2TJ104	1/4W 100K
R742	ERDS2TJ103	1/4W 10K
R743	ERDS2TJ335T	1/4W 3.3M
R744	ERDS2TJ223	1/4W 22K
R745	ERDS2TJ270T	1/4W 27
R746	ERDS2TJ472	1/4W 4.7K
R747	ERC12ZGK335	1/2W 3.3M ⚠
R748	ERDS2TJ103	1/4W 10K
R749	ERDS2TJ153	1/4W 15K
R750, 751	ERDS2TJ473	1/4W 47K
R752	ERDS2TJ103	1/4W 10K
R753	ERDS2TJ222	1/4W 2.2K
R754	ERDS2TJ150T	1/4W 15
R755	ERDS2TJ222	1/4W 2.2K
R758	ERDS1FVJ1R0T	1/2W 1.0 ⚠
R801-806	ERDS2TJ223	1/4W 22K
R807-811	ERDS2TJ102	1/4W 1K
R813	ERDS2TJ224T	1/4W 220K (PC)
R814, 815	ERDS2TJ182	1/4W 1.8K
R817	ERDS2TJ224T	1/4W 220K
R818, 819	ERDS2TJ561	1/4W 560 (P)
R818, 819	ERDS2TJ821	1/4W 820 (PC)
R822, 823	ERDS2TJ561	1/4W 560 (P)
R822, 823	ERDS2TJ391	1/4W 390 (PC)
R825, 826	ERDS2TJ152	1/4W 1.5K
R827	ERDS2TJ681	1/4W 680 (PC)
R830	ERDS2TJ471	1/4W 470
R831	ERDS2TJ151	1/4W 150
R832	ERDS2TJ822	1/4W 8.2K
R833	ERDS2TJ152	1/4W 1.5K
R834, 835	ERDS2TJ471	1/4W 470
R846-848	ERDS2TJ471	1/4W 470
R849-852	ERDS2TJ222	1/4W 2.2K
R853	ERDS2TJ393	1/4W 39K
R854, 855	ERDS2TJ473	1/4W 47K
R856	ERDS2TJ222	1/4W 2.2K
R857	ERDS2TJ102	1/4W 1K
R858-860	ERDS2TJ473	1/4W 47K
R862	ERDS2TJ105T	1/4W 1M
R863	ERD25FVJ122T	1/4W 1.2K ⚠
R865	ERD25FVJ122T	1/4W 1.2K ⚠
R866	ERDS2TJ473	1/4W 47K
R867, 868	ERDS2TJ393	1/4W 39K
R870, 871	ERDS2TJ102	1/4W 1K
R872-874	ERD25FVJ122T	1/4W 1.2K ⚠
R875-877	ERDS2TJ393	1/4W 39K
R878	ERDS2TJ102	1/4W 1K
R879	ERDS2TJ184T	1/4W 180K
R880	ERDS2TJ102	1/4W 1K
R881	ERDS1FVJ220T	1/2W 22
R882	ERDS2TJ102	1/4W 1K
R883	ERDS2TJ473	1/4W 47K
R884	ERDS2TJ684	1/4W 680K
R885	ERDS2TJ104	1/4W 100K
R886	ERDS2TJ123	1/4W 12K
R887	ERDS2TJ102	1/4W 1K
R888	ERDS2TJ123	1/4W 12K
R889-893	ERDS1FVJ470T	1/2W 47 ⚠
R894	ERDS1FVJ100T	1/2W 10 ⚠
R895, 896	ERG1SJ680E	1W 68
R897, 898	ERDS1FVJ100T	1/2W 10 ⚠
R899	ERDS2TJ124T	1/4W 120K
R906	ERDS2TJ103	1/4W 10K
R907, 908	ERDS2TJ102	1/4W 1K
R909-911	ERDS2TJ104	1/4W 100K
R912	ERDS2TJ473	1/4W 47K
R914, 915	ERDS2TJ104	1/4W 100K
R916	ERDS2TJ101	1/4W 100
R917	ERDS2TJ562	1/4W 5.6K
R918-922	ERDS2TJ102	1/4W 1K
R923	ERDS2TJ101	1/4W 100
R924	ERDS2TJ102	1/4W 1K
R925	ERDS2TJ101	1/4W 100
R926	ERDS2TJ102	1/4W 1K
R927	ERDS2TJ472	1/4W 4.7K
R928, 929	ERDS2TJ102	1/4W 1K
R930	ERDS2TJ101	1/4W 100
R931	ERDS2TJ271	1/4W 270
R932	ERDS2EJ121	1/4W 120
R933	ERDS2TJ104	1/4W 100K
R934	ERDS2TJ102	1/4W 1K
R935	ERDS2TJ472	1/4W 4.7K
R936	ERDS2TJ681	1/4W 680
R937	ERDS2TJ103	1/4W 10K
R938-940	ERDS2TJ104	1/4W 100K
R941	ERDS2TJ182	1/4W 1.8K
R942	ERDS2TJ222	1/4W 2.2K
R943	ERDS2TJ332	1/4W 3.3K
R944, 945	ERDS2TJ102	1/4W 1K
R946	ERDS2TJ182	1/4W 1.8K
R947	ERDS2TJ222	1/4W 2.2K
R948	ERDS2TJ332	1/4W 3.3K
R949	ERDS2TJ472	1/4W 4.7K
R950	ERDS2TJ471	1/4W 470
R951	ERDS2TJ472	1/4W 4.7K
R952, 953	ERDS2TJ102	1/4W 1K
R954	ERDS2TJ103	1/4W 10K
R955	ERDS2TJ182	1/4W 1.8K
R956	ERDS2TJ222	1/4W 2.2K
R957	ERDS2TJ332	1/4W 3.3K
R961	ERDS2TJ224T	1/4W 220K
R962	ERDS2TJ103	1/4W 10K
R964-966	ERDS2TJ104	1/4W 100K
R967	ERDS2TJ103	1/4W 10K
R968	ERDS2TJ102	1/4W 1K
R969	ERDS2TJ122	1/4W 1.2K
R970	ERDS2TJ152	1/4W 1.5K
R971	ERDS2TJ103	1/4W 10K
R972	ERDS2TJ102	1/4W 1K
R973	ERDS2TJ122	1/4W 1.2K
R974	ERDS2TJ152	1/4W 1.5K
R975	ERDS2TJ103	1/4W 10K
R976	ERDS2TJ102	1/4W 1K
R977	ERDS2TJ122	1/4W 1.2K
R978	ERDS2TJ152	1/4W 1.5K
R979	ERDS2TJ102	1/4W 1K
R980	ERDS2TJ222	1/4W 2.2K
R981	ERDS2TJ822	1/4W 8.2K
R982, 983	ERDS2TJ472	1/4W 4.7K
R984	ERDS2TJ822	1/4W 8.2K
R987	ERDS2TJ102	1/4W 1K
R1000	ERDS2TJ223	1/4W 22K
R1003	ERDS1FVJ820T	1/2W 82 ⚠
R1004, 1005	ERDS2TJ102	1/4W 1K
R1006	ERDS2TJ330	1/4W 33
R1007, 1008	ERDS2TJ473	1/4W 47K
R1009-1011	ERDS2TJ102	1/4W 1K
R1023	ERDS2TJ102	1/4W 1K (PC)
R1024	ERDS2TJ223	1/4W 22K (PC)
R1025	ERDS2TJ122	1/4W 1.2K (PC)
R1026	ERDS2TJ152	1/4W 1.5K (PC)
R1027, 1028	ERDS2TJ272T	1/4W 2.7K (PC)
R1029	ERDS2TJ152	1/4W 1.5K (PC)
R1030	ERDS2TJ272T	1/4W 2.7K (PC)
R1031	ERDS1FVJ472T	1/2W 4.7K ⚠
R1032	ERDS2TJ682T	1/4W 6.8K
R1033	ERDS2TJ472	1/4W 4.7K

Ref. No.	Part No.	Values & Remarks
R1034	ERDS1FVJ472T	1/2W 4.7K ⚠
R1035	ERDS2TJ682T	1/4W 6.8K
R1036	ERDS2TJ472	1/4W 4.7K
R1037, 1038	ERG1SJ680E	1W 68
R1039, 1040	ERDS1FVJ100T	1/2W 10 ⚠
R1041, 1042	ERDS2TJ222	1/4W 2.2K
R1043	ERDS2TJ682T	1/4W 6.8K
R1044	ERDS2TJ154	1/4W 150K
R1045	ERDS2TJ682T	1/4W 6.8K
R1046	ERG1SJ680E	1W 68
R1047, 1048	ERDS2TJ184T	1/4W 180K
R1049	ERDS1FJ270	1/2W 27 ⚠
R1050	ERDS2TJ154	1/4W 150K
R1051, 1052	ERDS2TJ682T	1/4W 6.8K
R1053, 1054	ERDS1FVJ222T	1/2W 2.2K ⚠
R1055, 1056	ERDS2TJ222	1/4W 2.2K
R1057-1060	ERD2FCVJ4R7T	1/4W 4.7 ⚠
R1061-1067	ERDS2TJ223	1/4W 22K
R1068	ERDS2TJ124T	1/4W 120K
R1069	ERDS2TJ474	1/4W 470K
R1070	ERDS2TJ102	1/4W 1K
R1071	ERDS1FJ270	1/2W 27 ⚠
R1072	ERDS2TJ102	1/4W 1K
R1073	ERDS1FJ270	1/2W 27 ⚠
R1074, 1075	ERDS2TJ102	1/4W 1K
R1076	ERG1SJ680E	1W 68
R1077	ERDS1FJ270	1/2W 27 ⚠
R1078	ERDS2TJ332	1/4W 3.3K
R1080-1085	ERDS2TJ100	1/4W 10
R1086	ERDS2TJ223	1/4W 22K
R1087	ERDS2TJ274	1/4W 270K
R1089, 1090	ERD25FVJ221T	1/4W 220 ⚠
R1091, 1092	ERDS1FVJ100T	1/2W 10 ⚠
R1093-1095	ERD25FVJ221T	1/4W 220 ⚠
R1096-1099	ERDS1FVJ100T	1/2W 10 ⚠
R1101, 1102	ERDS2TJ104	1/4W 100K
R1103, 1104	ERDS2TJ103	1/4W 10K
R1105, 1106	ERDS2TJ562	1/4W 5.6K
R1107, 1108	ERDS2TJ102	1/4W 1K
R1109-1112	ERDS2TJ103	1/4W 10K
R1113-1116	ERDS2TJ331	1/4W 330
R1117	ERDS2TJ182	1/4W 1.8K
R1121	ERDS2TJ103	1/4W 10K
R1131	ERDS2TJ106T	1/4W 10M
R1132	ERDS2TJ122	1/4W 1.2K
R1151-1153	ERDS2TJ822	1/4W 8.2K
R1154	ERDS2TJ103	1/4W 10K
R1155, 1156	ERDS2TJ822	1/4W 8.2K
R1157-1160	ERDS2TJ103	1/4W 10K
R1161, 1162	ERDS2TJ822	1/4W 8.2K
R1163-1166	ERDS2TJ103	1/4W 10K
R1167, 1168	ERDS2TJ822	1/4W 8.2K

Ref. No.	Part No.	Values & Remarks
R1169-1172	ERDS2TJ104	1/4W 100K
R1173-1175	ERDS2TJ100	1/4W 10
R1176	ERDS2TJ152	1/4W 1.5K
R1179-1188	ERDS2TJ102	1/4W 1K
R1301-1311	ERDS2TJ750	1/4W 75
R1312	ERDS2TJ101	1/4W 100
R1313, 1314	ERDS2TJ221	1/4W 220
R1315	ERDS2TJ101	1/4W 100
R1316	ERDS2TJ102	1/4W 1K
R1317	ERDS2TJ221	1/4W 220
R1318	ERDS2TJ101	1/4W 100
R1319	ERDS2TJ221	1/4W 220
R1320	ERDS2TJ750	1/4W 75
R1321-1323	ERDS2TJ473	1/4W 47K
R1401	ERDS2TJ331	1/4W 330
R1402, 1403	ERDS2TJ224T	1/4W 220K
R1404-1408	ERDS2TJ103	1/4W 10K
R1409, 1410	ERDS2TJ332	1/4W 3.3K
R1411	ERDS2TJ103	1/4W 10K
R1412	ERDS2TJ101	1/4W 100
R1413, 1414	ERDS2TJ103	1/4W 10K
R1415	ERDS2TJ100	1/4W 10
R1416	ERDS2TJ182	1/4W 1.8K
R1417	ERDS2TJ750	1/4W 75
R1418	ERDS2TJ471	1/4W 470
R1419	ERDS2TJ750	1/4W 75
R1420	ERDS2TJ101	1/4W 100
R1421	ERDS2TJ473	1/4W 47K
R1422	ERDS2TJ471	1/4W 470
R1423	ERDS2TJ123	1/4W 12K
R1424	ERDS2TJ103	1/4W 10K
R1425	ERDS2TJ472	1/4W 4.7K
R1426	ERDS2TJ101	1/4W 100
R1427	ERDS2TJ100	1/4W 10
R1428	ERDS2TJ471	1/4W 470
R1429	ERDS2TJ182	1/4W 1.8K
R1430	ERDS2TJ750	1/4W 75
R1431	ERDS2TJ223	1/4W 22K
R1432	ERDS2TJ473	1/4W 47K
R1433	ERDS2TJ101	1/4W 100
R1434	ERDS2TJ102	1/4W 1K
R1501, 1502	ERDS1FJ270	1/2W 27 ⚠
R1503-1506	ERG1SJ680E	1W 68
R1507, 1508	ERDS2TJ153	1/4W 15K
R1509, 1510	ERDS2TJ682T	1/4W 6.8K
R1511, 1512	ERDS2TJ153	1/4W 15K
R1513, 1514	ERDS2TJ682T	1/4W 6.8K
R1515	ERDS2TJ153	1/4W 15K
R1516	ERDS2TJ102	1/4W 1K
R1517	ERDS2TJ682T	1/4W 6.8K
R1518, 1519	ERDS2TJ122	1/4W 1.2K (PC)
R1521	ERDS2TJ103	1/4W 10K

Ref. No.	Part No.	Values & Remarks
		CAPACITORS
C101	ECBT1C103NS5	16V 0.01U
C103	ECBT1C103NS5	16V 0.01U
C104	ECBT1H102KB5	50V 1000P
C105	ECBT1H220JC5	50V 22P
C106	ECBT1C103NS5	16V 0.01U
C107	ECBT1H473ZF5	50V 0.047U
C108	ECBT1H8R2KC5	50V 8.2P
C109, 110	ECBT1C103NS5	16V 0.01U
C111	ECEA1EKA4R7B	25V 4.7U
C112	ECBT1C103NS5	16V 0.01U
C113	ECBT1H102KB5	50V 1000P
C114	RCE1HKA3R3BG	50V 3.3U
C115	ECEA1EKA4R7B	25V 4.7U
C116	ECBT1C822MS5	16V 8200P
C117	ECQB1H821JF3	50V 820P
C118, 119	ECFR1E183KR	25V 0.018U
C120, 121	ECEA1HKA010B	50V 1U
C122	ECEA1HKA2R2B	50V 2.2U
C123	ECEA1HKA010B	50V 1U
C124	ECBT1H102KB5	50V 1000P
C125	ECBT1H150JC5	50V 15P
C126	ECBT1H104ZF5	50V 0.1U
C127	ECEA1CKA220B	16V 22U
C128	ECBT1C103NS5	16V 0.01U
C129, 130	ECEA0JKA101B	6.3V 100U
C131	ECBT1C103NS5	16V 0.01U
C132	ECBT1H102KB5	50V 1000P
C133, 134	ECBT1H270JU5	50V 27P
C137, 138	ECBT1H271KB5	50V 270P
C141-144	ECEA1HKA010B	50V 1U
C145	ECBT1H220JC5	50V 22P
C147	ECBT1H102KB5	50V 1000P
C148, 149	ECBT1C103NS5	16V 0.01U
C150	ECBT1H104ZF5	50V 0.1U
C172	ECBT1H331KB5	50V 330P
C173	ECEA1CKA220B	16V 22U
C174	RCE1CKA100BG	16V 10U
C175	ECBT1C103NS5	16V 0.01U
C196	ECBT1H102KB5	50V 1000P
C201	ECBT1E223ZF	25V 0.022U
C202	ECBT1E103ZF	25V 0.01U
C302, 303	RCE1CKA100BG	16V 10U
C311	ECBT1H101KB5	50V 100P
C312	ECEA1EKA4R7B	25V 4.7U
C313	ECBT1E103ZF	25V 0.01U
C314	ECEA1EKA4R7B	25V 4.7U
C315	ECBT1E103ZF	25V 0.01U
C317-320	ECBT1H151KB5	50V 150P
C321	ECBT1E103ZF	25V 0.01U

Ref. No.	Part No.	Values & Remarks
C350	ECBT1C152KR5	16V 1500P
C351	ECEA1HKA2R2B	50V 2.2U
C352, 353	ECEA1EKN3R3B	25V 3.3U
C354	ECBT1C152KR5	16V 1500P
C355	ECEA1HKA2R2B	50V 2.2U
C356, 357	ECA1CM102B	16V 1000U
C401-416	ECBT1H151KB5	50V 150P
C417-420	ECEA1EKA4R7B	25V 4.7U
C421-424	ECBT1E103ZF	25V 0.01U
C425-428	ECBT1H101KB5	50V 100P
C429, 430	RCE1CKA100BG	16V 10U
C431, 432	ECBT1E103ZF	25V 0.01U
C433, 434	ECEA1CKA220B	16V 22U
C435, 436	ECBT1H151KB5	50V 150P
C438	ECEA1HKA010B	50V 1U
C440	ECBT1H104ZF5	50V 0.1U
C441	RCE1CKA100BG	16V 10U
C442	RCE1HKS010BV	50V 1U
C444	ECBT1H104ZF5	50V 0.1U
C445	RCE1CKA100BG	16V 10U
C446	ECBT1E103ZF	25V 0.01U
C450	ECBT1H104ZF5	50V 0.1U
C451	RCE1CKA100BG	16V 10U
C452, 453	ECEA0JKA101B	6.3V 100U
C454, 455	ECFR1E104KR	25V 0.1U
C501, 502	RCE1CKA470BG	16V 47U
C503, 504	ECBT1C562KR5	16V 5600P
C505, 506	ECBT1H221KB5	50V 220P
C507, 508	ECBT1H101KB5	50V 100P
C509, 510	ECEA1CKN4R7B	16V 4.7U
C511, 512	ECEA1EKA4R7B	25V 4.7U
C513, 514	ECBT1E103ZF	25V 0.01U
C515, 516	ECQV1H683JM3	50V 0.068U
C517, 518	ECFR1C123KR	16V 0.012U
C519, 520	ECBT1C272KR5	16V 2700P
C521, 522	ECFR1C223KR	16V 0.022U
C523	RCE1HKS3R3BV	50V 3.3U
C524	RCE1HKA3R3BG	50V 3.3U
C525	ECEA1CKS220	16V 22U
C526	ECEA1CKA220B	16V 22U
C527, 528	RCE1AKA330BG	10V 33U
C529, 530	ECBT1H561KB5	50V 560P
C531, 532	ECBT1H101KB5	50V 100P
C533, 534	ECBT1H271KB5	50V 270P
C581	ECBT1E223ZF	25V 0.022U
C601, 602	RCE1CKA100BG	16V 10U
C603	RCE1HKA3R3BG	50V 3.3U
C604	RCE1HKAR47BG	50V 0.47U
C605-609	RCE1HKA3R3BG	50V 3.3U
C610	RCE1HKAR47BG	50V 0.47U
C611, 612	RCE1HKA3R3BG	50V 3.3U
C613-615	RCE1CKA100BG	16V 10U

Ref. No.	Part No.	Values & Remarks
C616-618	ECBT1H104ZF5	50V 0.1U
C619-621	RCE1CKA100BG	16V 10U
C622-627	ECBT1H104ZF5	50V 0.1U
C628-630	RCE1CKA100BG	16V 10U
C631-634	ECBT1H104ZF5	50V 0.1U
C635	RCE1HKA3R3BG	50V 3.3U
C636	RCE1HKAR47BG	50V 0.47U
C637, 638	RCE1HKA3R3BG	50V 3.3U
C639, 640	ECEA1CKA220B	16V 22U
C641	ECBT1H221KB5	50V 220P
C642	ECBT1E223ZF	25V 0.022U
C643, 644	ECBT1H181KB5	50V 180P
C645, 646	ECBT1H821KB5	50V 820P
C647	ECBT1C122KR5	16V 1200P
C648	ECBT1H104ZF5	50V 0.1U
C649, 650	ECBT1H101KB5	50V 100P
C653, 654	ECBT1H101KB5	50V 100P
C655, 656	ECBT1C152KR5	16V 1500P
C657, 658	ECBT1H101KB5	50V 100P
C659	ECBT1H821KB5	50V 820P
C660	ECBT1E103ZF	25V 0.01U
C661, 662	ECBT1H101KB5	50V 100P
C663, 664	ECBT1H102KB5	50V 1000P
C666	ECBT1H104ZF5	50V 0.1U
C667, 668	ECBT1C152KR5	16V 1500P
C669	ECBT1C122KR5	16V 1200P
C671, 672	ECEA1CKA220B	16V 22U
C673	ECBT1H104ZF5	50V 0.1U
C675, 676	ECBT1H331KB5	50V 330P
C678	ECBT1H331KB5	50V 330P
C681	ECA1VM221B	35V 220U
C697, 698	RCE1CKA100BG	16V 10U
C701	ECEA0JKA101B	6.3V 100U
C702	RCE1CKA100BG	16V 10U
C703, 704	ECEA1VKA470B	35V 47U
C705	ECBT1E103ZF	25V 0.01U
C706	ECEA1EKA100B	25V 10U
C708	ECBT1E103ZF	25V 0.01U
C709	ECEA1CKA101B	16V 100U
C711	ECA1EM472E	25V 4700U ⚠
C712	RCE1CKA100BG	16V 10U
C713, 714	ECBT1E103ZF	25V 0.01U
C715	ECKR1H103ZF5	50V 0.01U
C716, 717	ECEA1VKA470B	35V 47U
C718-721	ECA1VM332E	35V 3300U ⚠
C722, 723	ECET75V153WX	75V 15000U ⚠
C724	RCE1AU101BV	10V 100U
C725, 726	ECQE2104KF3	250V 0.1U
C727	ECBT1E103ZF	25V 0.01U
C728	RCE1CKA470BG	16V 47U
C729	ECA1EM102B	25V 1000U ⚠
C730	ECEA1HKA2R2B	50V 2.2U

Ref. No.	Part No.	Values & Remarks
C731	ECKR1H103ZF5	50V 0.01U
C732	ECBT1E223ZF	25V 0.022U
C733	ECKWNS102MBM	400V 1000P ⚠
C734	ECEA0JKA221B	6.3V 220U
C735	RCE1CKA100BG	16V 10U
C737	ECBT1E103ZF	25V 0.01U
C744	ECEA1CKA220B	16V 22U
C801	ECBT1E103ZF	25V 0.01U
C802, 803	ECEA2AU100	100V 10U
C804	ECBT1H820KB5	50V 82P
C805	ECBT1H102KB5	50V 1000P
C806	ECBT1H151KB5	50V 150P
C807	ECEA1CKA220B	16V 22U
C808	ECBT1H151KB5	50V 150P
C809	ECEA1CKA220B	16V 22U
C810	ECBT1H151KB5	50V 150P
C811	ECEA1CKA220B	16V 22U
C812	ECBT1H151KB5	50V 150P
C813, 814	ECA1JM330B	63 V 33U
C815	ECEA1CKA220B	16V 22U
C816, 817	ECBT1H102KB5	50V 1000P
C818	ECBT1H151KB5	50V 150P
C819	ECEA1CKA220B	16V 22U
C820	ECBT1E103ZF	25V 0.01U
C821	ECBT1H151KB5	50V 150P
C822	ECEA1CKA220B	16V 22U
C823	ECBT1H151KB5	50V 150P
C824	ECEA1CKA220B	16V 22U
C825	ECBT1H151KB5	50V 150P
C826	ECEA1CKA220B	16V 22U
C827	ECBT1H151KB5	50V 150P
C828	ECEA1CKA220B	16V 22U
C829	ECBT1H151KB5	50V 150P
C830	ECEA1CKA220B	16V 22U
C831	ECBT1H151KB5	50V 150P
C832	ECEA1CKA220B	16V 22U
C833-836	ECEA0JKA101B	6.3V 100U
C837-840	ECEA1EKN3R3B	25V 3.3U
C841	ECBA1H681KB5	50V 680P
C842	ECEA1EKN3R3B	25V 3.3U
C843-845	ECBA1H681KB5	50V 680P
C847	ECBT1H271KB5	50V 270P
C848	ECBA1H681KB5	50V 680P
C849	ECA1JM330B	63V 33U
C850, 851	ECA1JM470B	63V 47U
C852, 853	ECBA1H681KB5	50V 680P
C854, 855	ECCD1H150KC	50V 15P
C856	ECA1JM330B	63V 33U
C857-859	ECBA1H681KB5	50V 680P
C860	ECA1JM470B	63V 47U
C861	ECBA1H681KB5	50V 680P
C862, 863	ECA1JM470B	63V 47U

Ref. No.	Part No.	Values & Remarks
C864-866	ECCD1H150KC	50V 15P
C867, 868	ECBA1H681KB5	50V 680P
C869	ECBT1H102KB5	50V 1000P
C870	ECKR1H103ZF5	50V 0. 01U
C871	ECEA1JU220	63V 22U
C873	ECEA2AN2R2SB	100V 2. 2U
C875	ECBT1H102KB5	50V 1000P
C876-880	ECQV1H473JM3	50V 0. 047U
C881	ECA1HM101B	50V 100U (PC)
C882	ECEA1HKA010B	50V 1U (PC)
C883-887	ECKT1H223ZF	50V 0. 022U
C888	ECBT1E103ZF	25V 0. 01U
C889, 890	ECKT1H223ZF	50V 0. 022U
C892, 893	ECBT1H221KB5	50V 220P
C894-897	ECEA2AU100	100V 10U
C898	ECQV1H823JM3	50V 0. 082U (PC)
C901-903	ECBT1H101KB5	50V 100P
C904, 905	ECBT1E103ZF	25V 0. 01U
C906, 907	ECBT1H101KB5	50V 100P
C908, 909	ECA2AM100B	100V 10U
C910	ECBT1E103ZF	25V 0. 01U
C911	RCE1VKA100BG	35V 10U
C912	ECBT1H101KB5	50V 100P
C913	ECBT1E103ZF	25V 0. 01U
C914	RCE1VKA100BG	35V 10U
C915, 916	ECBT1E103ZF	25V 0. 01U
C917	ECA0JM102B	6. 3V 1000U
C918	ECEA1HKA010B	50V 1U
C919	ECBT1E103ZF	25V 0. 01U
C920	ECEA0JKA101B	6. 3V 100U
C921	ECEA1HKA010B	50V 1U
C922	ECA0JM471B	6. 3V 470U
C923	ECBT1H101KB5	50V 100P
C924-930	ECBT1H331KB5	50V 330P
C931	ECEA0JKA101B	6. 3V 100U
C932	ECBT1H104ZF5	50V 0. 1U
C933	RCE1CKA100BG	16V 10U
C934	ECBT1E103ZF	25V 0. 01U
C935, 936	ECBT1H104ZF5	50V 0. 1U
C937	RCE1CKA100BG	16V 10U
C938	ECBT1H101KB5	50V 100P
C939	ECBT1E103ZF	25V 0. 01U
C940, 941	ECBT1H331KB5	50V 330P
C1001-1005	ECEA1CKA220B	16V 22U
C1101, 1102	RCE1CKA100BG	16V 10U
C1103, 1104	ECBT1C222KR5	16V 2200P
C1106	RCE1CKA100BG	16V 10U
C1107-1109	ECBT1H104ZF5	50V 0. 1U
C1110	ECEA1EKA4R7B	25V 4. 7U
C1111, 1112	ECBT1H104ZF5	50V 0. 1U
C1113	RCE1CKA100BG	16V 10U
C1115	ECBT1H104ZF5	50V 0. 1U

Ref. No.	Part No.	Values & Remarks
C1116	RCE1CKA100BG	16V 10U
C1117-1119	ECBT1H104ZF5	50V 0. 1U
C1121	ECEA0JKA101B	6. 3V 100U
C1122, 1123	ECBT1H104ZF5	50V 0. 1U
C1124	ECEA0JKA101B	6. 3V 100U
C1125-1127	ECBT1H104ZF5	50V 0. 1U
C1128	ECA0JM102B	6. 3V 1000U
C1129, 1130	ECBT1H104ZF5	50V 0. 1U
C1131	ECBT1H330J5	50V 33P
C1132	ECBT1H120J5	50V 12P
C1133	ECA0JM102B	6. 3V 1000U
C1134, 1135	ECBT1H104ZF5	50V 0. 1U
C1136, 1137	ECA0JM102B	6. 3V 1000U
C1138, 1139	ECBT1H104ZF5	50V 0. 1U
C1140, 1141	ECA0JM471B	6. 3V 470U
C1142, 1143	ECBT1H104ZF5	50V 0. 1U
C1144, 1145	ECA0JM471B	6. 3V 470U
C1146	ECBT1H104ZF5	50V 0. 1U
C1147	ECA0JM471B	6. 3V 470U
C1148	ECBT1H104ZF5	50V 0. 1U
C1151-1154	ECBA1H681KB5	50V 680P
C1155, 1156	ECBT1C272KR5	16V 2700P
C1157-1160	ECBT1C152KR5	16V 1500P
C1161, 1162	ECBT1C682KR5	16V 6800P
C1163-1166	ECBT1H101KB5	50V 100P
C1167, 1168	ECBT1H561KB5	50V 560P
C1169-1171	ECBT1H104ZF5	50V 0. 1U
C1172-1174	ECEA0JKA101B	6. 3V 100U
C1175-1177	ECBT1H104ZF5	50V 0. 1U
C1178, 1179	ECBT1H181KB5	50V 180P
C1180	ECBT1E103ZF	25V 0. 01U
C1181-1183	RCE1CKA100BG	16V 10U
C1184-1186	ECBT1H104ZF5	50V 0. 1U
C1187-1189	ECBT1H101KB5	50V 100P
C1190	ECBT1H181KB5	50V 180P
C1193-1195	RCE1CKA100BG	16V 10U
C1196-1200	ECBT1H104ZF5	50V 0. 1U
C1201	ECEA0JKA101B	6. 3V 100U
C1202	ECA0JM102B	6. 3V 1000U
C1203	ECBT1H104ZF5	50V 0. 1U
C1204, 1205	RCE1CKA100BG	16V 10U
C1206, 1207	RCE1HKA3R3BG	50V 3. 3U
C1208	RCE1CKA100BG	16V 10U
C1210	ECBT1E103ZF	25V 0. 01U
C1211-1214	ECBT1H101KB5	50V 100P
C1218	ECKT1H102KB	50V 1000P
C1219	ECCT1H181K	50V 180P
C1220	ECBT1H820KB5	50V 82P
C1221, 1222	ECBT1H104ZF5	50V 0. 1U
C1223	ECBT1C152KR5	16V 1500P
C1224	ECBT1E103ZF	25V 0. 01U
C1225	ECBT1C152KR5	16V 1500P

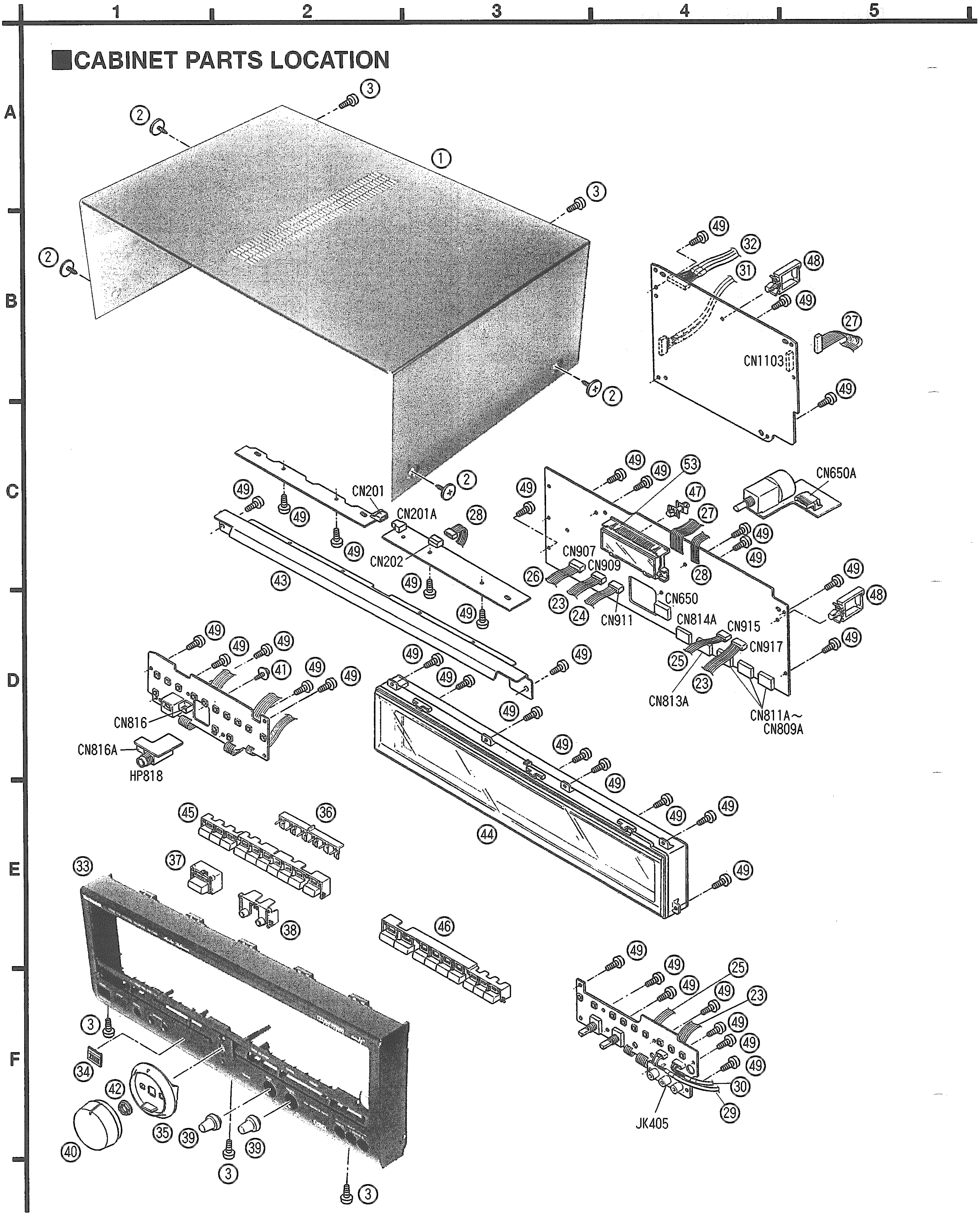
Ref. No.	Part No.	Values & Remarks
C1226	ECBT1H101KB5	50V 100P
C1301-1303	ECEA1HKA2R2B	50V 2. 2U
C1304	ECEA1HKS2R2B	50V 2. 2U
C1305	ECEA0GKA471B	4V 470U
C1306-1309	ECEA1HKS2R2B	50V 2. 2U
C1310	ECA0JM471B	6. 3V 470U
C1311	ECBT1H102KB5	50V 1000P
C1312-1314	ECBT1E103ZF	25V 0. 01U
C1315-1317	ECEA0JKA470B	6. 3V 47U
C1318-1320	ECEA1HKA2R2B	50V 2. 2U
C1401	ECEA1HKA2R2B	50V 2. 2U
C1402	RCE1CKA100BG	16V 10U
C1403	ECEA1CKS100L	16V 10U
C1404	RCE1CKA100BG	16V 10U
C1405	ECEA0JKA101B	6. 3V 100U
C1406	ECBT1E103ZF	25V 0. 01U
C1407	ECA0JM471B	6. 3V 470U
C1408	ECEA0JKA101B	6. 3V 100U
C1409	ECBT1E103ZF	25V 0. 01U
C1410-1412	ECBT1H102KB5	50V 1000P
C1413	ECBT1E103ZF	25V 0. 01U
C1414	ECBT1H150JC5	50V 15P
C1415	ECA0JM471B	6. 3V 470U
C1416	ECBT1H330J5	50V 33P
C1417	ECBT1H220JC5	50V 22P
C1418	ECBT1E103ZF	25V 0. 01U
C1419	ECBT1H470J5	50V 47P
C1420	ECBT1E103ZF	25V 0. 01U
C1421	ECEA0JKA101B	6. 3V 100U
C1422	ECBT1E103ZF	25V 0. 01U
C1423	ECEA0JKA101B	6. 3V 100U
C1424	ECBT1H101KB5	50V 100P
C1425	ECBT1E103ZF	25V 0. 01U
C1426-1428	ECBT1H101KB5	50V 100P
C1429	ECBT1C105ZF5	16V 1U
C1430, 1431	ECBT1H101KB5	50V 100P
C1448-1450	ECBT1E103ZF	25V 0. 01U

REPLACEMENT PARTS LIST

Notes: * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RKM0331A-K	CABINET	
2	SNE2129-3	SCREW	
3	XTBS3+8JFZ1	SCREW	
4	RWJ1805480KQ	FLAT CABLE(5P) (CN/JW701)	
5	RWJ1807470KQ	FLAT CABLE(7P) (CN/JW702)	
6	RWJ1806650KQ	FLAT CABLE(6P) (CN/JW706)	
7	RWJ1810330KQ	FLAT CABLE(10P) (CN/JW707)	
8	RWJ1804570KQ	FLAT CABLE(4P) (CN/JW703)	
9	REZ0924	CONNECTOR ASS'Y	
10	REM0020-1	FAN MOTER UNIT	
10-1	MDN-4RB4MRC	FAN MOTER	
10-2	RMQ0208-K	FAN CAP	
10-3	RMQ0209-K	FAN CASE	
10-4	RMQ0212-K	FAN TERMINAL CAP	
10-5	SHE232-1	FAN	
10-6	SUS271	SPRING	
11	RGR0244A-A	REAR PANEL	(P)
11	RGR0244A-B1	REAR PANEL	(PC)
12	RHD30061-K	SCREW	
13	RHR1370ZA	SPACER	
14	RJR0168	SHORT PIN PLUG	
15	RKA0053-A	FOOT	
16	RKQ0089	P. C. B. SUPPORT	
17	RMA0977	HOLD ORNAMENT	
18	RMC0158	TRANSISTOR HOLDER	
19	RMC0272	TUNER EARTH SPRING	
20	RMK0200-3	CHASSIS	
21	RMN0217	P. C. B. HOLDER	
22	RMN0392	P. C. B. HOLDER	
23	RWJ1806070KQ	FLAT CABLE(6P) (CN909/CN917)	
24	RWJ1805070KQ	FLAT CABLE(5P) (CN/JW911)	
25	RWJ1804070KQ	FLAT CABLE(4P) (CN/JW915)	
26	RWJ1806100KQ	FLAT CABLE(6P) (CN/JW907)	
27	RFKEATX50PAK	CONNECTOR ASS'Y(8P)	
28	RFKEATX50PBK	CONNECTOR ASS'Y(5P)	
29	RFKEATX50PCK	CONNECTOR ASS'Y(3P)	
30	RFKEATX50PDK	CONNECTOR ASS'Y(4P)	
31	RFKEATX50PEK	CONNECTOR ASS'Y(4P)	
32	RFKEATX50PFK	CONNECTOR ASS'Y(9P)	
33	RFKGATX50P-K	FRONT PANEL ASS'Y	
34	RGB0077-N	THX BADGE	
35	RGK0842-S	ORNAMENT RING	
36	RGL0344-Q	OPTICAL CONDUCTIVE PLATE	
37	RGU0882-K	POWER BUTTON	
38	RGU1438-K	SPEAKERS SELECT BUTTON	
39	RGW0175-2K	BASS/TREBLE KNOB	
40	RGW0176-K	VOLUME KNOB	
41	RHD26016	SCREW	
42	RHN90001	NUT	
43	RMA0869	LAMP ORNAMENT	
44	RSE0006A	METER UNIT	
45	RGU1436-K	DOLBY PRO LOGIC BUTTON	
46	RGU1437-K	SELECTOR BUTTON	
47	SHR9793	SPACER	
48	SHR9814	CABLE CLIP	
49	XTBS26+8J	SCREW	
50	XTB3+20JFZ	SCREW	
51	XTB3+6G	SCREW	
52	XTW3+15T	SCREW	
53	RMN0389	FL HOLDER	

CABINET PARTS LOCATION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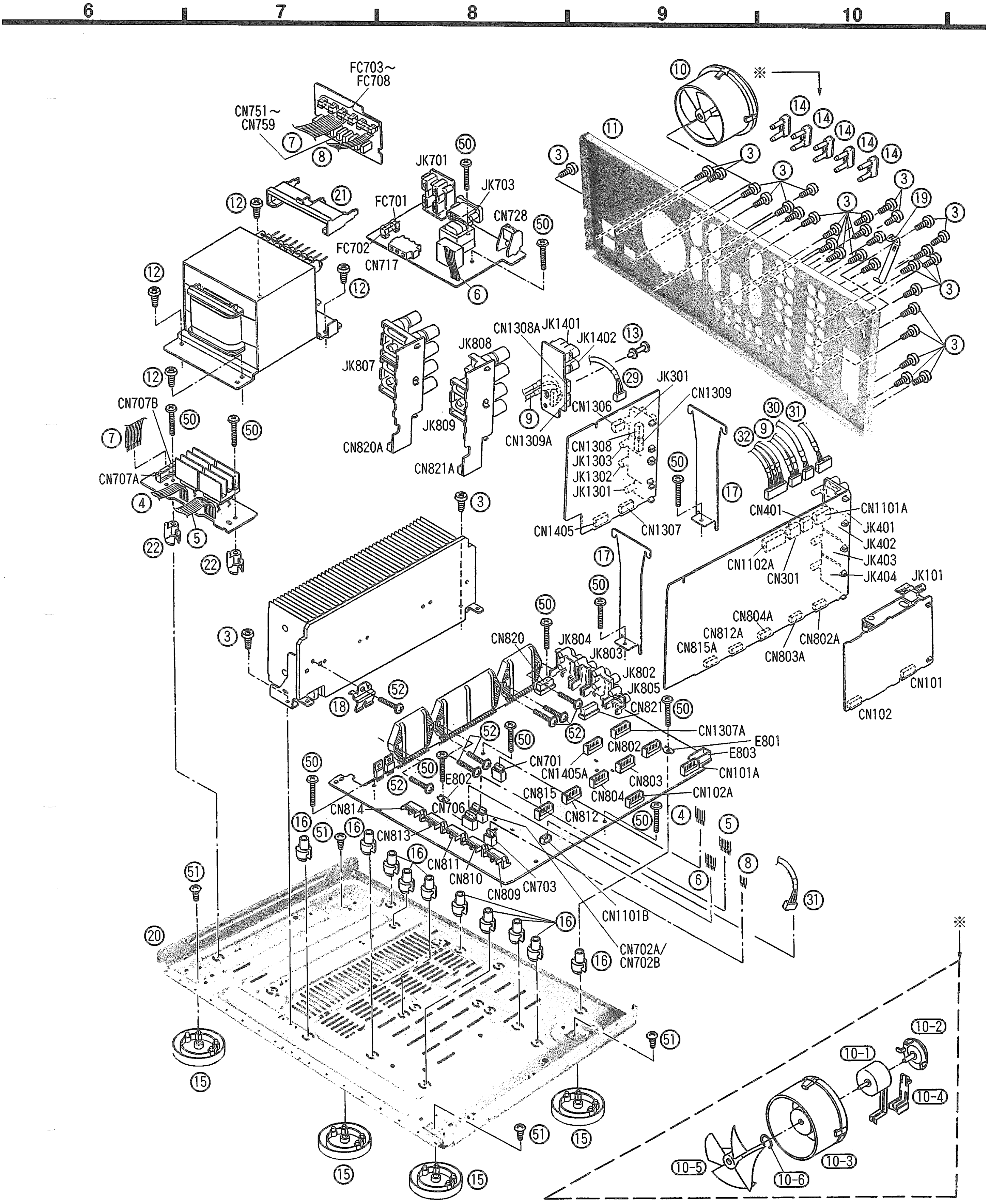
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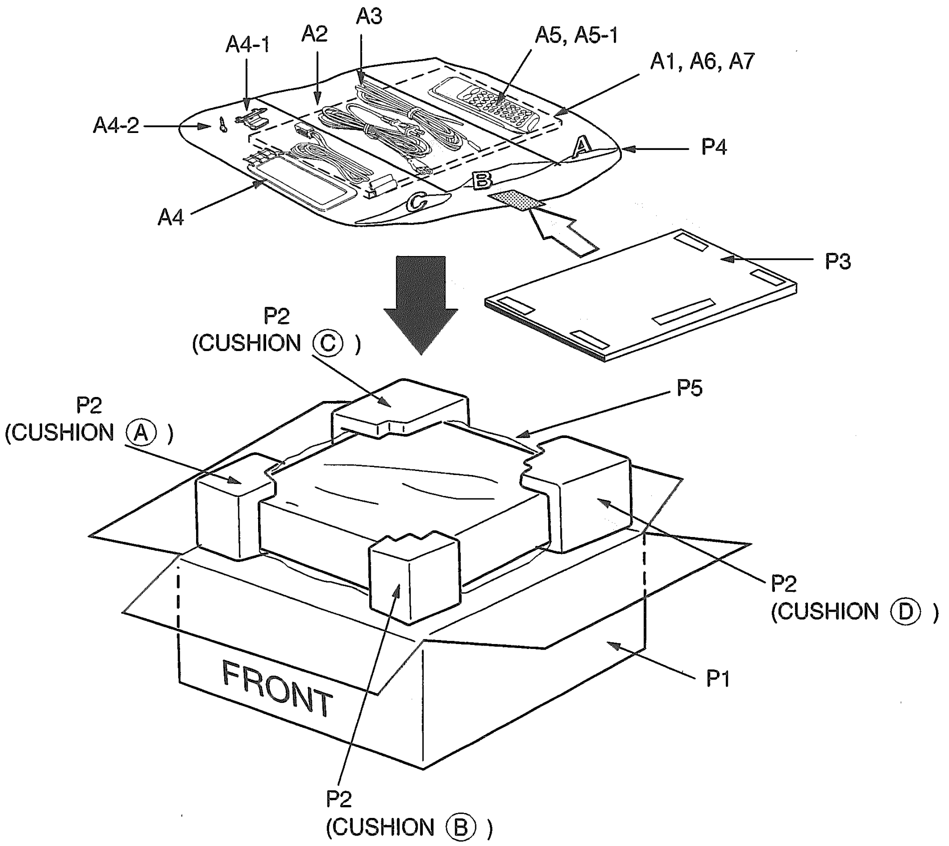
REPLACEMENT PARTS LIST

Notes:
- * Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
  Parts without these indications can be used for all areas.
- * Remote Control Ass'y: Supply period for three years from termination of production.
- * The "(SF)" mark denotes the standard part.

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIAL	
P1	RPG2970	PACKING CASE	
P2	RPN0982	CUSHION	
P3	RPQ0164	PAD(ACCESSORIES)	
P4	RPF0139	PROTECTION BAG(F.B.)	
P5	SPP730	PROTECTION BAG (UNIT)	
		ACCESSORIES	
A1	RQT3490-P	INSTRUCTION MANUAL	(P)
A1	RFKSATX50PCK	INSTRUCTION MANUAL ASS'Y	(PC)
A2	SJA172	AC POWER SUPPLY CORD	⚠(SF)
A3	RSA0006	FM INDOOR ANTENNA	

Ref. No.	Part No.	Part Name & Description	Remarks
A4	RSA0010	AM LOOP ANTENNA SET	
A4-1	RMN0244	AM ANTENNA HOLDER	
A4-2	XTN3+12AFZ	SCREW	
A5	RAK-SA608MH	REMOTE CONTROL TRANSMITTER	
A5-1	RKK0020-K	BATTERY COVER	FOR R/C TRANSMITTER
A6	RQA0114	WARRANTY CARD	(P)
A6	SQX7183	WARRANTY CARD	(PC)
A7	RQCB0391	SERVICENTER LIST	(P)
A7	SQX9131	SERVICENTER LIST	(PC)
		<GREASE OR JIG/TOOL>	
		GREASE	
SA1	RFKX0002	COMPOUND GREASE	

PACKAGING



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